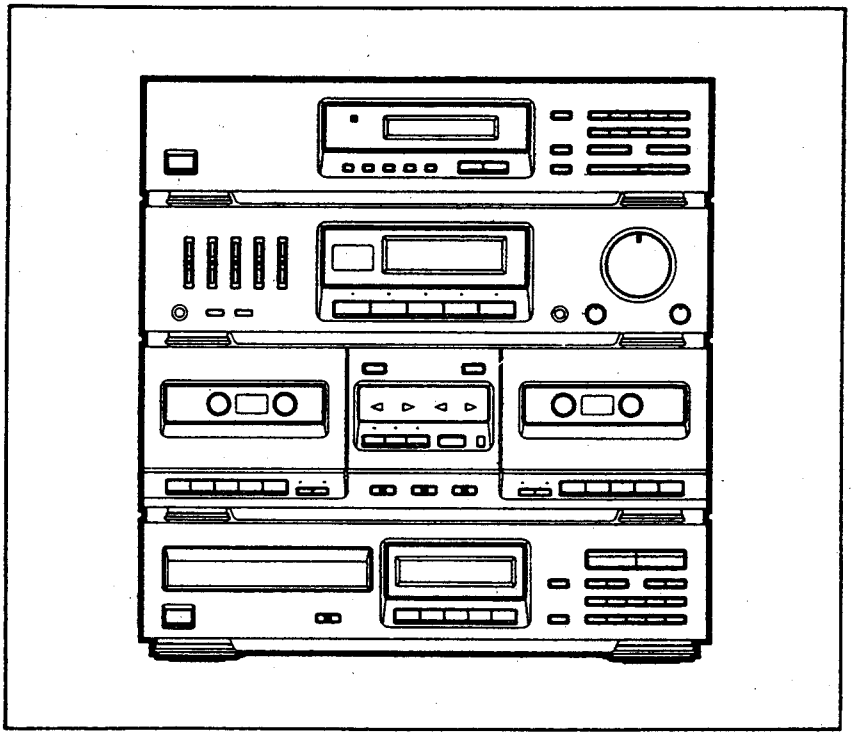
017.628 6936

Service Manual

COMPACT HI-FI STEREO SYSTEM



VTGF 126

PENTAGON-3000

6936

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SPECIFICATIONS

Amplifier Section

.Frequency Response.....20Hz - 60KHz
.T.H.D..... 0.2%
.Sensitivity and Impedance
TV.....250mV/47Kohm
.S/N Ratio(IHF A)
Phono.....65dB
TV.....83dB
.Graphic Equalizer
100Hz,330Hz,1KHz,3.3KHz,
10KHz,± 10dB

Tuner Section

FM
.Tuning Range.....87.5 - 108MHz(50KHz step)
.Sleep time.....30minute
.Sensitivity(S/N 30dB).....3uV(75ohm)
.S/N Ratio.....65dB
.Distortion(mono).....0.25%
(stereo).....0.5%
.Stereo Separation.....40dB
.Image Rejection.....40dB

AM
.Tuning Range.....522 - 1620KHz(9KHz step)
.Sensitivity(S/N 20dB).....450uV/M
.Image Rejection.....35dB
Distortion.....3.0%

Cassette Deck Section
.Frequency Response(Rec/Playback)
Normal,CrO2,Metal.....50Hz - 14KHz
.Full Logic system
.S/N Ratio(CCIR/ARM)
Dolby B NR in.....65dB
Dolby B NR out.....55dB
.Wow and Flutter.....0.2%(WRMS)
.FF and REW time.....120min(C-60 tape)

Phono Section

.Phono system.....Belt Drive Automatic Turntable
.Phono motor.....DC servo motor
.Turntable size.....2.8cm(11")
.Turntable speeds.....33 - 1/3 rpm,45 rpm
.Cartridge type.....Moving Magnet

Remote Control Transmitter

.Battery.....3V(1.5V X 2 "AAM" type)
.Dimensions(w x H x D)... 220 x 20 x 70 (m/m)
.Weight.....170g

Compact Disc Player Section

General

.Type.....Compact disc digital audio system
.Usable discs.....Diameter 120/80mm
Thickness 1.2mm
Linecer Speed 1.2 - 1.4m/sec
.Laser used Semi Conductor Laser.....Wavelength 780nm
.Error Correction system.....CIRC
.Modulation system.....EFM
.Sampling Frequency.....44.1KHz
.D/A Convertion.....16 bit Linear
.Filter Section.....4 times over Sampling Digital Filter

Audio Section

.Frequency Response.....20Hz - 20KHz(±12dB)
.Dynamic Range.....moer than 80dB
.S/N Ratio.....more than 90dB
.Channel Separation.....more than 80dB(1KHz)
.Harmonic Distortion.....less than 0.08%(1KHz,0dB)
.Wow and Flutter.....below measurable limit
.Output Voltage.....2.0V ± 0.5V(1KHz,0dB)
.Channels.....2 - channel(stereo)

Function

.Play / Pause
.Stop / Clear
.Intro Playback
.Auto Playback
.Disc Repeat(Repeat ALL)
.One Sector Repeat(Repeat 1)
.One Sector Repeat(Repeat A-B)

.Open / Close
.Skip
.Random Playback
.Program Playback
.Direct Search(By 0 - 9 Keys)

.Reverse and Auto Reverse Playback
.4 Mode Time Display
.Auto Space

.Auto Pause Function
.Random Program(30 musics)

General

.Power consumption.....410W
.Power supply.....220V/50Hz
.Dimension(W x H x D).....360×410×355mm
.Weight.....15.3Kg

SAFETY PRECAUTION

1. Before servicing, unplug the power cord to prevent an electric shock.
2. When replacing parts, use only manufacturer's recommended components for safety
3. Check the condition of the power cord. Replace if wear or damage is evident.
4. After servicing, be sure to restore the lead dress, insulation barriers, insulation papers, shields, etc,.

MEASUREMENTS AND ADJUSTMENTS

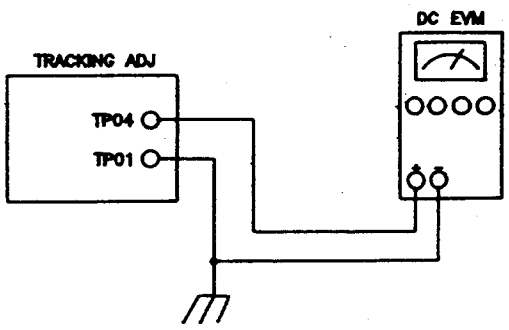
MW / FM

Control positions and equipment used

- .MW and FM signal generator (MW and FM-SG).
- .Stereo modulator.
- .Distortion analyser.
- .Oscilloscope.
- .AF Oscillator.
- .AC and DC electronic voltmeter (EVM)
- .Frequency counter.
- .Chock coil (100uH).
- .Resistor (100Kohm).

TUNING FREQUENCY RANGE ADJUSTMENT

1. Test equipment connection is shown in figure 1.
2. Set the unit to the desired band (FM, MW).
3. Place the radio frequency to 108MHz for FM, 522KHz for MW.
4. Adjust L7 for FM, L103 for MW so that the DC voltage is 8.0V for FM, 1.2V for MW.



(FIG.1)

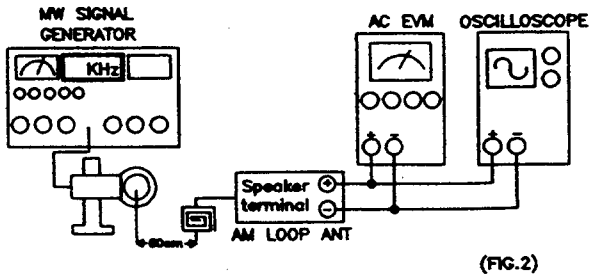
MW RF ADJUSTMENT

1. Test equipment connection is shown in figure 2.
2. Set the unit to "MW" position.
3. Place the radio frequency display and signal generator setting to 612KHz.
4. Adjust L102 for MW for maximum output.
5. Place the radio frequency display and signal generator setting to 1503KHz.
6. Adjust CT01 for maximum output.
7. Repeat steps 3 - 6.
8. Adjust L104 for MW for maximum out put.

Note: Antenna input level must be as low as possible being free from AGC.

MW SIGNAL GENERATOR CONDITION

Modulation.....30%
Modulation frequency.....400Hz



(FIG.2)

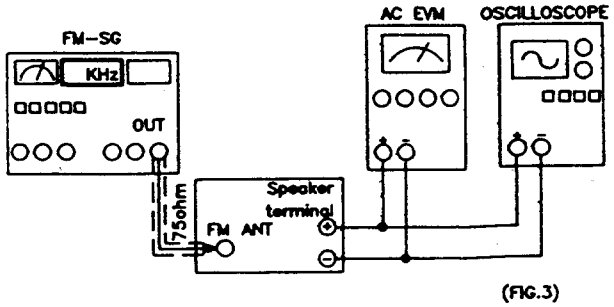
FM RF ADJUSTMENT

1. Test equipment connection is shown in figure 3.
2. Place unit into "FM" position.
3. Place the radio frequency display and signal generator setting to 100.1MHz, add weak input so that noise is included in the output waveform.
4. Adjust L2, L4, L5, L6 for maximum output.

Note: As three output reading will be present, adjustments must be made at center frequency.

FM SIGNAL GENERATOR CONDITION

Modulation.....100%
Modulation frequency.....400Hz
Output level.....66dB



(FIG.3)

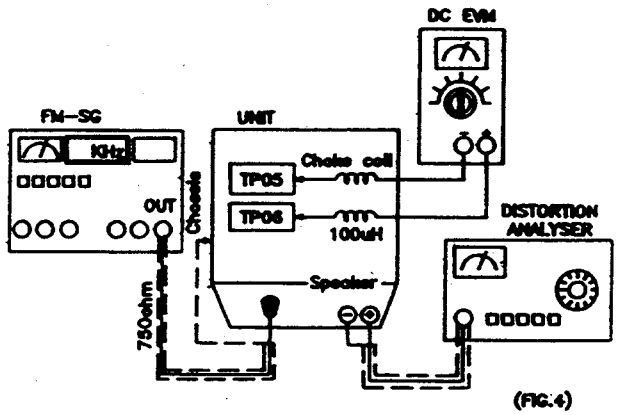
FM MONO DISTORTION ADJUSTMENT

1. Test equipment connection is shown in figure.
2. Set the unit to "FM" position.
3. Place the radio frequency display and signal generator setting to 100.10MHz.
4. Adjust L106 core so that voltage measured in signal mode is 0mV(0±30mV) in range.
5. Adjust L105 so that the distortion factor of L-ch is minimized.
6. Repeat steps 4 and 5 a few times.
7. Make sure that the distortion factors of L-ch and R-ch nearly the same with each other to minimum.

Note: The adjusting screwdriver used should be made of ceramic.

FM SIGNAL GENERATOR CONDITION

Modulation.....100%
Modulation frequency.....400Hz
Output level.....66dB



(FIG.4)

MPX VCO ADJUSTMENT

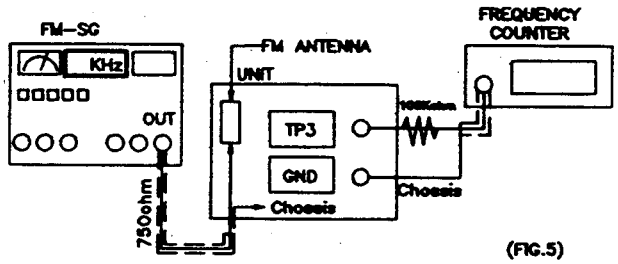
1. Test equipment connection is shown in figure.
2. Place the radio frequency display and signal generator setting to 100.10MHz.
3. Adjust VR11 for 19KHz ± 0.05KHz on frequency counter reading.
4. Modulate the pilot by 8% and make sure that the stereo indicator lights up.

USING ALTERNATE SYSTEM

1. Apply stereo signal from generator or receive the stereo broadcast.
2. Adjust VR11 until stereo lights up.

FM SIGNAL GENERATOR CONDITION

Modulation.....0%(Non-modulation)
Output level.....66dB



(FIG.5)

*CASSETTE

MEASUREMENT CONDITION:

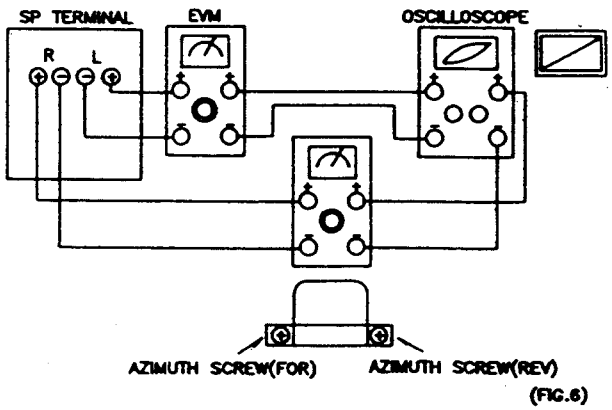
.Make sure heads are clean.
.Make sure capstan and pressure roller are clean.

*TEST TAPE:

.Head azimuth adjustment(10KHz, -10dB)
: MTT-114N.
.Tape speed adjustment(3KHz, -10dB)
: MTT-111N.
.Normal reference blank : MTT-5511

HEAD AZIMUTH ADJUSTMENT(Tape I, II)

1. Test equipment connection is shown in figure.
2. Playback the azimuth adjusted part(10KHz, -10dB) of the test tape (MTT-114N) and regulate the angle adjusting screw so that the outputs of L-ch and R-ch are maximized.
   (When the adjusting positions are different with L-ch and R-ch, find an position where are the outputs of L-ch and R-ch are balanced, and then mark the adjustment.)
3. At the same time, draw a lissajous waveform and eliminate phase deflection.
4. After the adjustment, apply screw-lock to the angle adjusting value.

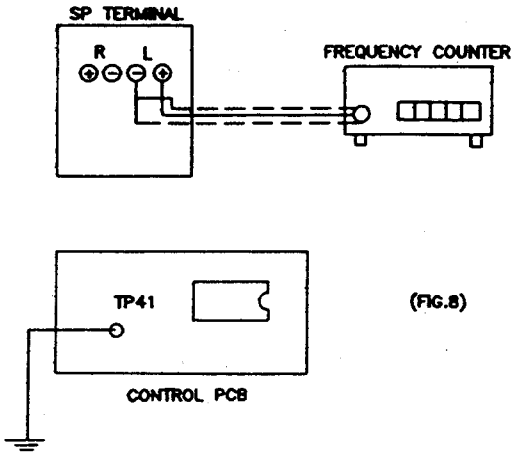


(FIG.6)

TEST SPEED ADJUSTMENT (TAPE I, II)

1. Test equipment connection is shown in figure 8.
2. Place unit into "TAPE" position.
3. Playback the test tape MTT-111N.
4. Adjust first VR41(TAPE I) and VR44(TAPE II) for high speed (6000 ± 60Hz).
5. Adjust VR41(TAPE I) and VR43(TAPE II) for normal speed (3000 ± 30Hz).

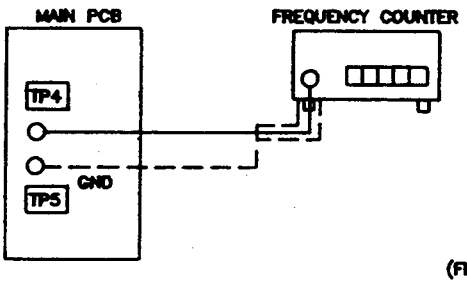
***Hi-Speed : TP41(GND)**
***Nor-Speed : TP41(OPEN)**



(FIG.8)

BIAS OSCILLATION ADJUSTMENT (TAPE II)

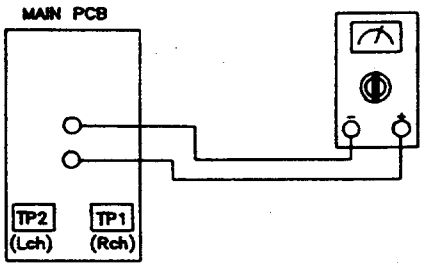
1. Test equipment connection is shown in figure 9.
2. Insert a metal tape and set the cassette deck to "REC" mode.
3. Adjust T501 for 105KHz on frequency counter reading.



(FIG.9)

RECORDING BIAS ADJUSTMENT

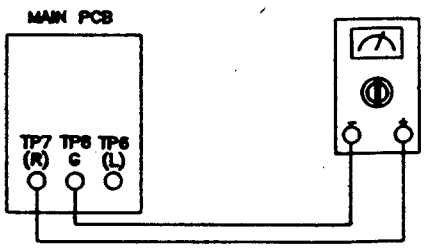
1. Test equipment connection is shown in figure 10.
2. Set the unit to "TAPE" position.
3. Insert a metal tape and set the cassette deck to "REC" mode.
4. Adjust SVR1(L-ch) and SVR2(R-ch)for recording bias so that voltage in signal is 1200uV.
5. At the same time, check CrO_2 tape (660uV) and normal tape (460uV).



(FIG.10)

PLAYBACK GAIN ADJUSTMENT

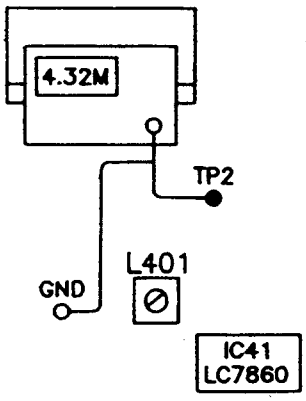
1. Playback the playback gain adjusted part (400Hz, 200nWb) of the test tape (MTT-150).
2. Adjust SVR4(TAPE I, L-ch), SVR3(TAPE I,R-ch) so that AC mV meter will become 245mV.
3. Adjust SVR6(TAPE II, L-ch), SVR5(TAPE II,R-ch) so that AC mV meter will become 245mV.



(FIG.11)

PLL FREE RUN FREQUENCY ADJUSTMENT

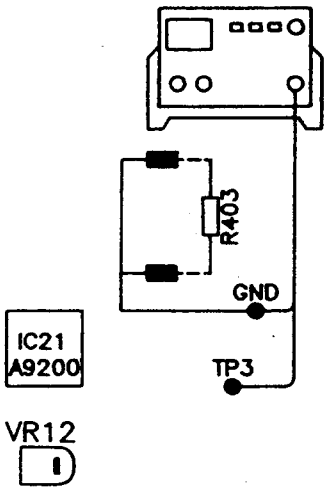
1. Connect the frequency counter to TP2 on the PCB.
2. Turn on the unit and press the stop button.
3. Adjust the L401 using a plastic driver so that the frequency counter reads 4.32± 0.01MHz (See Fig. 1.1)



(Fig 1.1)

TRACKING OFF SET ADJUSTMENT

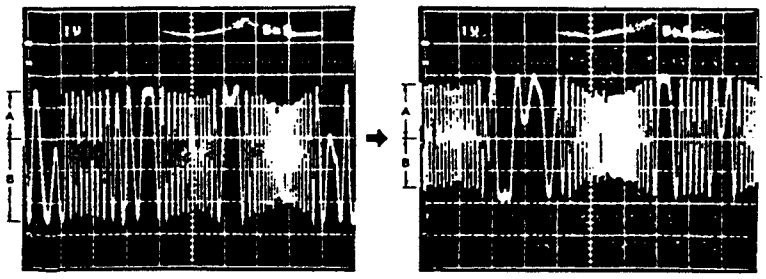
1. Position ;the baseline trace of the oscilloscope to the center horizontal graticule line.
   Oscilloscope setting: VOLT.....50mV/Div
   SWEEP TIME 5m/sec
   INPUT COUPLING.....GND
2. Turn on the power switch and press the stop button.
3. Connect the clip wire between R403 and GND (See Fig 2.1).
4. Connect the oscilloscope to TP3 on the PCB.
   Oscilloscope setting: VOLT.....50mV/Div
   SWEEP TIME.....5m/sec
   INPUT COUPLING.....DC
5. Adjust the VR12 (Tracking offset, T.O.) so that the offset voltage is OV.



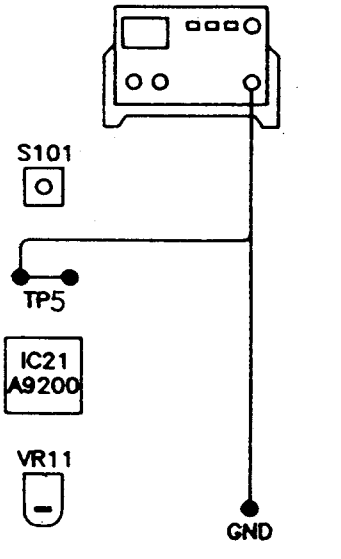
(Fig 2.1)

E/F BALANCE ADJUSTMENT

1. Position the baseline trace of the oscilloscope to the center horizontal graticule line oscilloscope setting:
   VOLT.....1V/Div
   SWEEP.....2m/sec
   INPUT COUPLING.....GND
2. Turn on the power switch and play the track 1 of test disc.
3. Connect the oscilloscope to TP5 (See Fig 3-1)
4. Press the S101 using oscilloscope, adjust the VR11 so that A=B (See Fig 3-2)
   Oscilloscope Setting: VOLT.....1V/Div
   SWEEP TIME.....5m/sec
   INPUT COUPLING.....DC



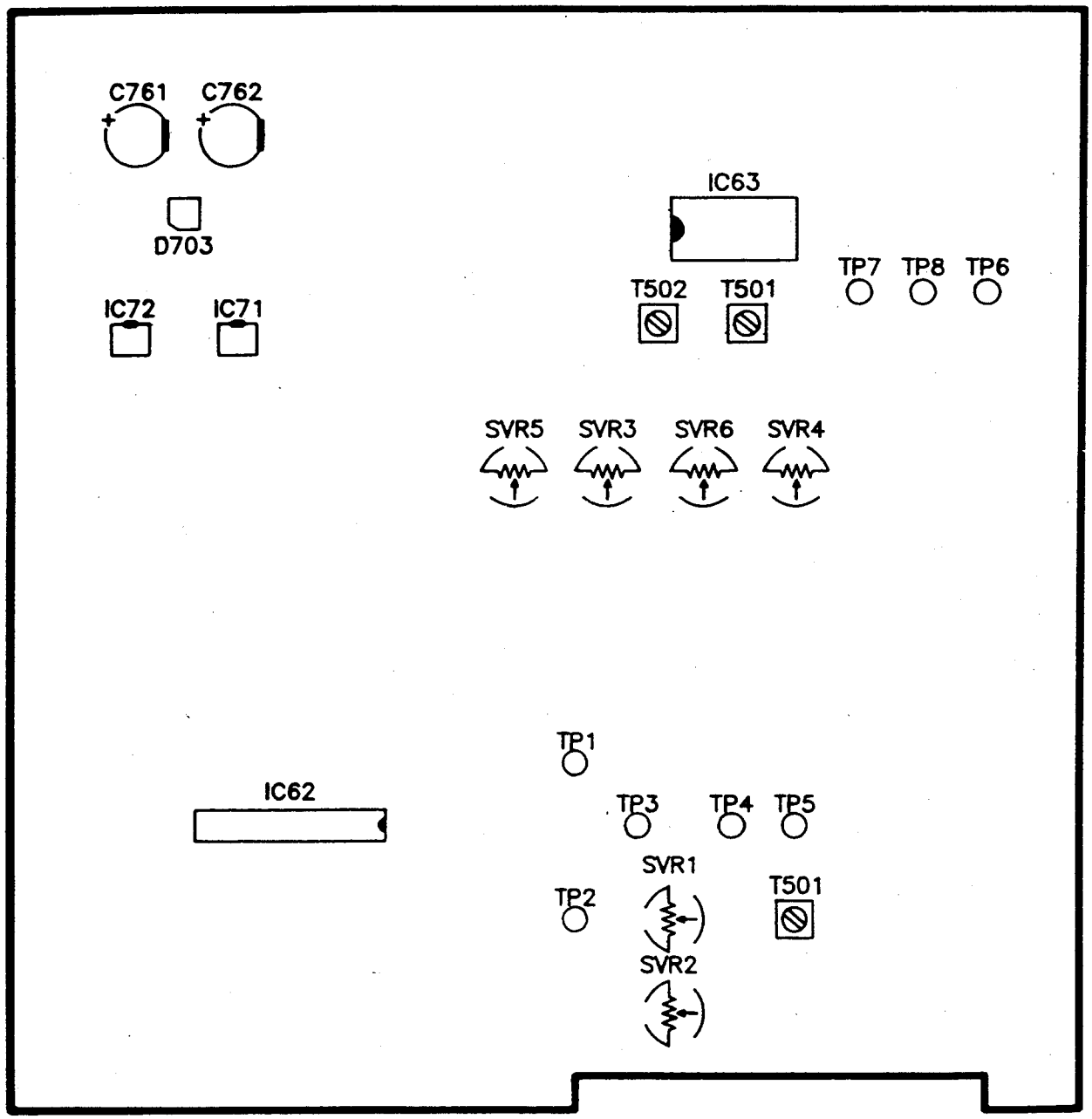
(Fig 3-2)



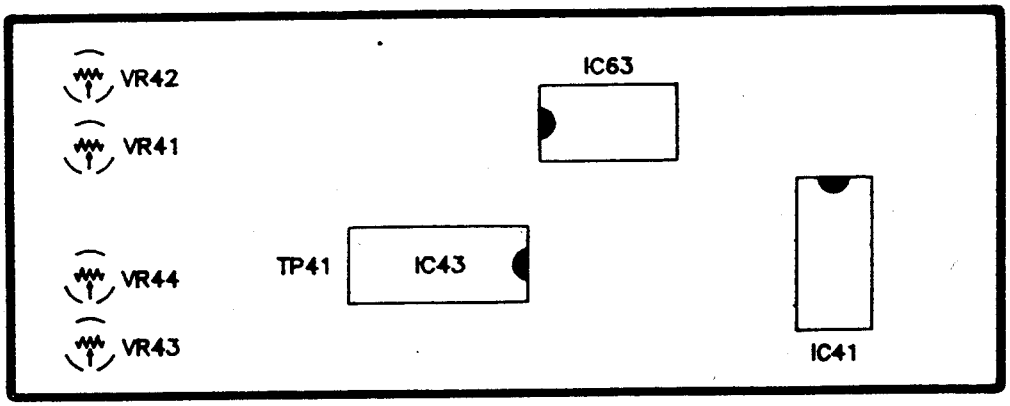
(Fig 3-1)

5. When the L.C.D display 00:00 press the play button again and repeat procedure(4).

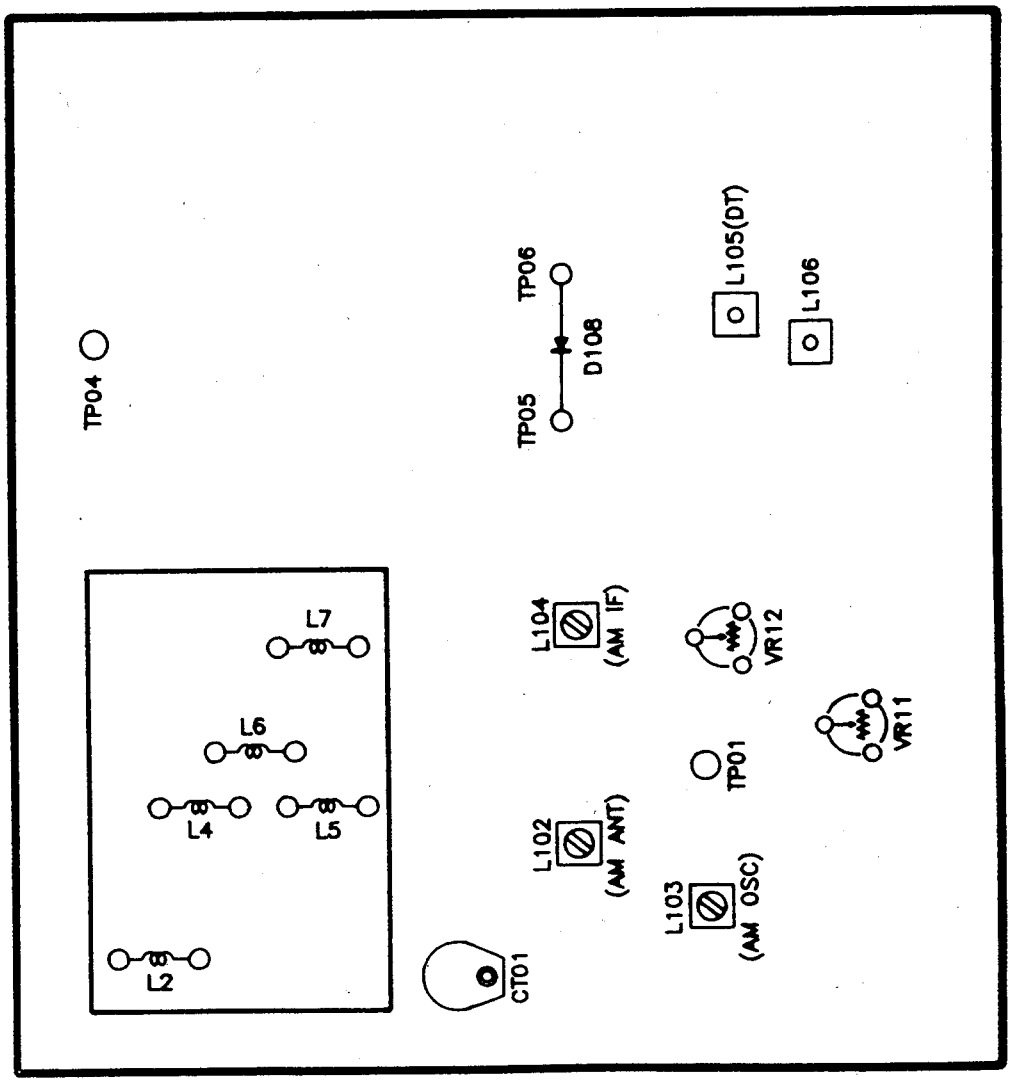
MAIN PCB


C761
C762
D703
IC72
IC71
IC63
T502
T501
TP7
TP8
TP6
SVR5
SVR3
SVR6
SVR4
TP1
IC62
TP3
TP4
TP5
SVR1
TP2
T501
SVR2

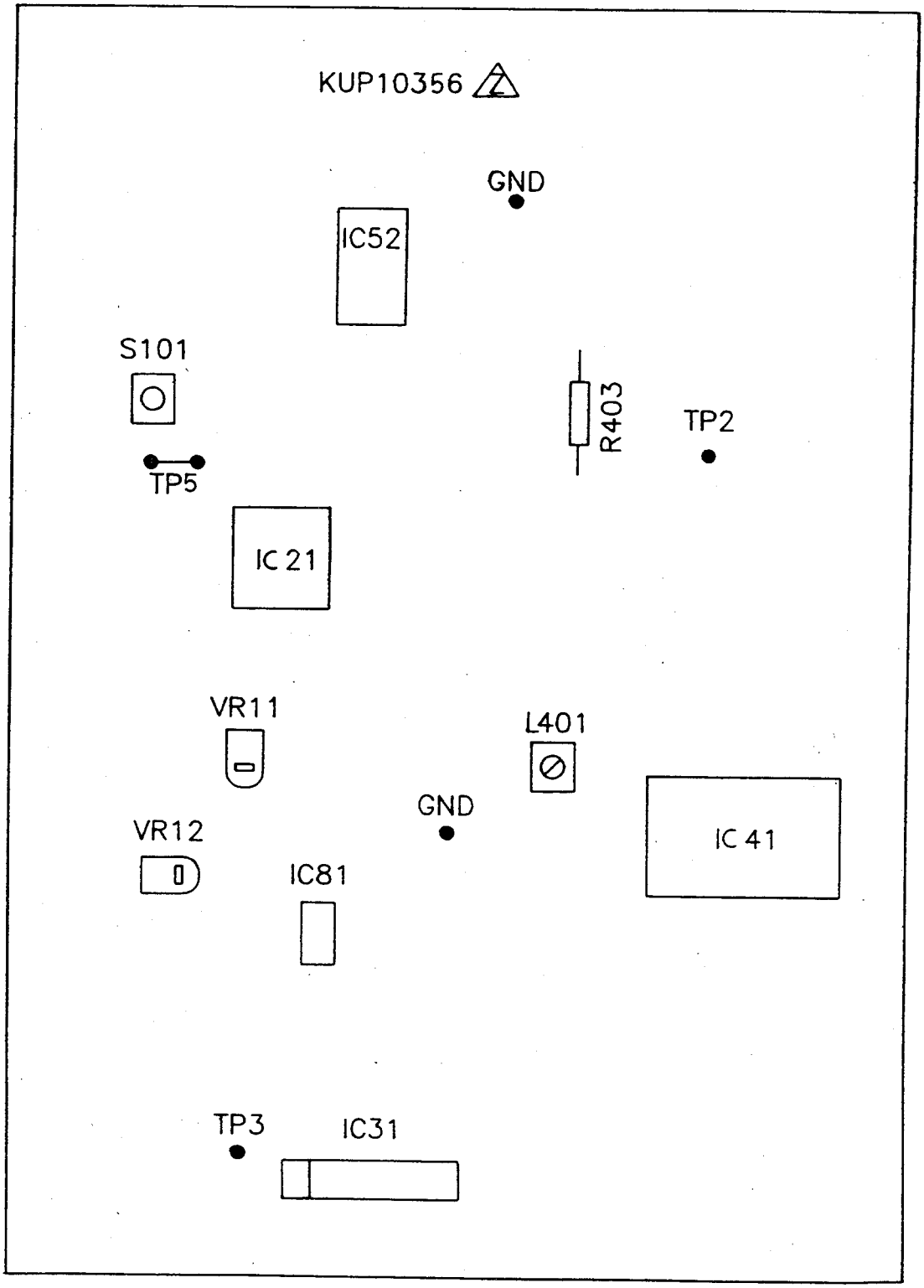
CONTROL PCB



TUNER PCB



CDP MAIN PCB


KUP10356
GND
IC52
S101
R403
TP2
TP5
IC 21
VR11
L401
GND
IC 41
VR12
IC81
TP3
IC31

■ CDP PART MAJOR ICS

LC 7860K (DIGITAL SIGNAL PROCESSOR

No.	SYMBOL	I/O		DESCRIPTION
1	TEST1	I	—	Test pin. Normally not connected.
2	AO	O	—	VCO is generated by connecting resonance circuit between AI and AO.
3	AI	I	—	(8.6436MHz) is phase output with EFM signal, and is set to increase
4	PDO	O	—	frequency when +
5	Vss	—	—	GND
6	EFMO	O	—	1 to 2Vpp HF signal is input to EFMIN.
7	EFMO	O	—	Output from EFMO and BFMO passes through amplitude limiter an
8	EFMIN	I	—	reverse phase EFM signal is obtained from both. This performs slice level control.
9	TEST2	I	—	Test pin. Normally not connected.
10	V_{DD}	—	—	+5V
11	CLV+	O	—	Disk motor control output
12	CLV−	O	—	
13	FOCS	O	—	Focus servo is off when FOCS is HIGH. The lens is lowered by FST
14	FST	O	—	and then FST is HIGH, the lens is gradually pulled up. FOCS is reset
15	FZD	I	—	when FZD is generated. For focus-in.
16	HFL	I	*1	*1 Kick pulses, JP+ and JP−, are generated according to track jump
17	TES	I	*1	command. A jump of the prescribed number of tracks is (1,4,16,64).
18	FSEQ/PCK	O	*2	*2 When 4.3218MHz PCK monitor terminal/DEMO is HIGH both SYNC
19	TOFF	O	*1	detected from EFM signal and SYNC of counter are the same at
20	TGL	O	*1	HIGH.
21	THLD	O	*1	
22	JP+	O	*1	
23	JP−	O	*1	
24	DEMO	I	—	Set and sound output adjustment pin function.
25	TEST3	I	—	Test pin. Normally not connected.
26	EMPH	O	—	De-emphasis is necessary when HIGH.
27	DFOFF	I	—	ON/OFF switch for digital filter. No filtering when HIGH.
28	DSPOFF	I	—	Test pin. Normally not connected.
29	SMP2	O	*3	*3 Signal output to DAC and signal for L/R switching and
30	LRCLK	O	*3	sample hold.
31	V_{DD}	—	*4	*4 +5V
32	SMP3	O	*3	*5 Signal output for CDROM
33	SMP1	O	*3	*6 CDROM sync signal
34	DFOUT	O	*3	
35	DACLX	O	*3	
36	DFIN	I/O	*5	
37	LRSY	O	*6	
38	MSBF	I	*3	
39	CK2	O	—	2.1609MHz
40	AD10	O	*7	*7 RAM address output

No.	SYMBOL	I/O		DESCRIPTION
41	$\overline{OE}$	O	*8	*8 Output state when WE=L and input state when WE=H. OE is for input/output control.
42	$\overline{WE}$	O	*8	
43	AD9	O	*7	
44	AD8	O	*7	
45	AD7	O	*7	
46	AD6	O	*7	
47	AD5	O	*7	
48	AD4	O	*7	
49	AD3	O	*7	
50	AD2	O	*7	
51	AD1	O	*7	
52	AD0	O	*7	
53	DB7	I/O	*9	*9 DB7 to DB0: connected to RAM data pins. *10 GND
54	DB6	I/O	*9	
55	DB5	I/O	*9	
56	V_{SS}	—	*10	
57	DB4	I/O	*9	
58	DB3	I/O	*9	
59	DB2	I/O	*9	
60	DB1	I/O	*9	
61	DB0	I/O	*9	
62	TEST4	I	—	Test pin. Normally not connected.
63	TEST5	I	—	
64	IOFF	I	—	For CD ROM. HIGH time interpolation and holding of previous value not performed.
65	EFLG	O	—	C1/C2 1-level and 2-level error correction
66	PW	O	—	PWSY is SYNC combining main and sub and change from HIGH to LOW is taken externally. The P,Q,R,S,T,U,V, and W subcodes are read by sending 8 clock pulses to SBCK.
67	PWSY	O	—	
68	SBCK	I	—	
69	FSX	O	—	7.35KHz sync signal output
70	WRQ	O	*11	*11 WRQ goes HIGH when data of subcode Q passes CRC check. This is taken externally and the data from SQOUT is read by sending $\overline{CQCK}$. When data is required with LSB first, M/L is driven LOW. After the microprocessor sets RWC to HIGH, the command is given by output synchronized with the $\overline{CQCK}$ command data. *12 Goes LOW once when power is turned on.
71	RWC	I	*11	
72	SQOUT	O	*11	
73	V_{DD}	—	*11	
74	COIN	I	*11	
75	$\overline{CQCK}$	I	*11	
76	$\overline{RES}$	I	*12	
77	M/L	I	*11	
78	V_{SS}	—	—	GND
79	X_{IN}	I	—	Pin for connection to 8.6436MHz crystal oscillator
80	X_{OUT}	O	—	

LA 9200NM (ANALOG SIGNAL PR)

NO	SYMBOL	I/O	DESCRIPTION
1	FO	O	TRACKING Amp 'F' SIGNAL OUT PUT
2	TEAO	O	TRACKING Error OUT PUT
3	TESI	I	TRACKING Error IN PUT
4	VR	—	GND
5	TPA+	I	TRACKING Preamp in PUT +
6	TPA−	I	TRACKING Preamp in PUT −
7	TPRO	O	TRACKING Preamp OUT PUT
8	TOFS	O	TRACKING Servo OFF PIN
9	THDS	O	TRACKING Servo Hold OUT PUT
10	JPO	O	Jump Signal OUT PUT
11	JP−	I	'−' Jump Signal IN PUT
12	JP+	I	'+' Jump Signal IN PUT
13	THLD	I	TRACKING Servo Hold IN PUT
14	TGL	I	TRACKING gain Low CONTROL IN PUT
15	TOFF	I	TRACKING Servo off control IN PUT
16	TES	O	TRACKING Count OUT PUT
17	HFL	O	EFM Signal (HF Signal) OUT PUT
18	FZD	O	Focus Zero cross detect OUT PUT
19	VEE	—	−5V
20	FOCS	I	Focus Servo off control IN PUT
21	VCC	—	+5V
22	SLCO	O	Slice level control OUT PUT
23	EFMO	I	Inverted EFM Signal IN PUT
24	EFMO	I	EFM Signal IN PUT
25	GND	—	GND
26	PDO	O	Phase difference OUT PUT
27	DRF	O	Focus O.K Signal OUT PUT
28	VCOC	O	VCO control Signal OUT PUT
29	VCO−	I	VCO control amp Feed Back IN PUT
30	FSW	O	Focus Servo off control switch
31	FEAO	O	Focus error OUT PUT
32	FEA−	I	Focus error amp Feed back IN PUT
33	FEA+	I	Focus error preamp IN PUT
34	BHLD	O	Bottom hold OUT PUT
35	PHLD	O	Peak hold OUT PUT
36	RFSM	O	RF Signal (summed) OUT PUT
37	RFS−	I	RF amp Feed back IN PUT
38	LDSW	I	Laser Diode on/off control IN PUT

39	LDD	O	Laser Diode on/off control OUT PUT
40	VCC	—	+5V
41	FIV1	I	Pick-up Photo diode B, D IN PUT
42	FIV2	I	Pick-up Photo diode A, C IN PUT
43	VEE	—	−5V
44	VR1	—	GND
45	VR2	—	GND
46	E0	O	E/F Balance Control VR Connection
47	E	I	Pick-up Photo diode E IN PUT
48	F	I	Pick-up Photo diode F IN PUT

6116 (16Kbit S RAM)

NO	SYMBOL	I/O	DESCRIPTION
1	A7	I	address IN
2	A6	I	address IN
3	A5	I	address IN
4	A4	I	address IN
5	A3	I	address IN
6	A2	I	address IN
7	A1	I	address IN
8	A0	I	address IN
9	1/01	1/0	Data IN/out
10	1/02	1/0	Data IN/out
11	1/03	1/0	Data IN/out
12	GND	–	GND
13	1/04	1/0	(DATA IN/OUT)
14	1/05	1/0	(DATA IN/OUT)
15	1/06	1/0	(DATA IN/OUT)
16	1/07	1/0	(DATA IN/OUT)
17	1/08	1/0	(DATA IN/OUT)
18	CE	I	Chip Enable INput
19	A10	I	address INput
20	OE	I	OUTPUT Enable INput
21	WE	I	Read, Write control
22	A9	I	address IN
23	A8	I	address IN
24	VOC	–	+5V

ANAM 1015C (LC5864H) (μ-COM)

No.	SYMBOL	I/O	DESCRIPTION
1	COM1	O	Out put terminals for applying power to common electrodes of the LCD panel.
2	COM2	O	Out put terminals for applying power to common electrodes of the LCD panel.
3	CUP1	–	Switching terminals for supplying LCD driving Voltage to the $V_{DD}1$/and $V_{DD}2$ terminals.
4	CUP2	–	Switching terminals for supplying LCD driving Voltage to the $V_{DD}1$/and $V_{DD}2$ terminals.
5	RES	I	Reset input port.
6	RCIN	I	Remote Control input port.
7	SQOUT	I	SQOUT Signal input port. (From D.S.P)
8	COIN	O	Control commend output port.(To D.S.P)
9	CQCK	O	SUBQ Code clock output port. (To D.S.P)
10	WREQ	I/O	Write Requst Control.
11	DRFI	I	D.R.F Signal input port. (Focus O.K Signal input)
12	PWIN	–	Nomally not connected.
13	STNB	I	High input when TUNER MODE. (COP off when High)
14	SYNC	–	Nomally not connected.
15	FEM–	O	Feed moter Inside Signal output.
16	FEM+	O	Feed moter Outside Signal output.
17	CLOS	O	Tray close pulse output.
18	OPEN	O	Tray open pulse output.
19	–	–	Nomally not connected.
20	–	–	Nomally not connected.
21	$V_{DD}2$	–	LCD driving power.
22	$V_{DD}1$	–	LCD driving power.
23	V_{SS}	–	GND
24	V_{DD}	–	Power supply (+5V)
25	XIN	I	Pin for Connection to 4.0MHz Ceramic resonator. (input)
26	XOUT	O	Pin for Connection to 4.0MHz Ceramic resonator. (output)
27	–	–	Nonally not connected.
28	FESW	I	Feed motor inside signal input
29	CLSW	I	Tray close signal input. (Switch)
30	OPSW	I	Tray open signal input. (Switch)
31	KI0	I	Key input terminal.
32	KI1	I	Key input terminal.
33	KI2	I	Key input terminal.
34	KI3	I	Key input terminal.
35	KS0	I	Key scan terminal.
36	KS1	I	Key scan terminal.
37	KS2	I	Key scan terminal.
38	KS3	I	Key scan terminal.
39	KS4	I	Key scan terminal.
40	KS5	I	Key scan terminal.
41	LDSW	O	Laser diod ON/OFF cont signal.
42	PWOP	O	Power ON/OFF control signal.
43	TEST	–	GND
44	MUTE	O	Mutine Signal output
45	INSW	I	Key Scan terminal.
46~78	SG0~SG35	O	LCD panel drivers.
79	COM4	O	Output terminals for applying power to common electrodes of the LCD panel.
80	COM3	O	Output terminals for applying power to common electrodes of the LCD panel.

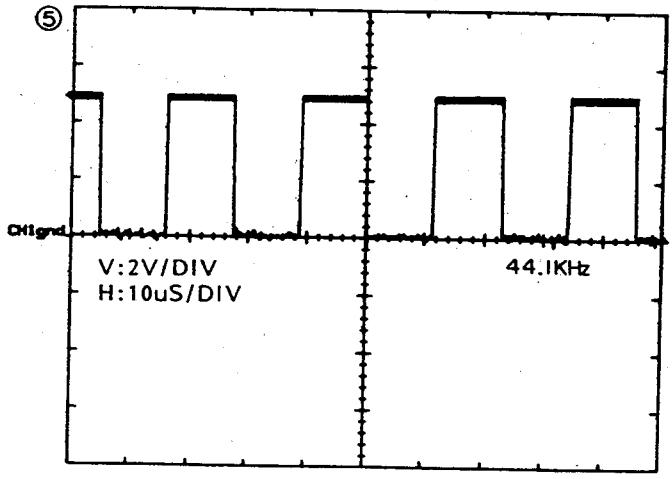
SM 5807DP (DIGITAL FILTER)

No.	SYMBOL	I/O	DESCRIPTION
1	XT	I	Crystal oscillator Circuit input or external input.
2	$\overline{XT}$	O	Crystal oscillator Circuit input.
3	$\overline{CKSL}$	I	At HIGH: 16.9344MHz, At LOW: 8.6436MHz
4	CKO	O	Clock output. (Buffer output of XT input)
5	LRCI	I	LR clock input.
6	DIN	I	Serial data input.
7	BCKI	I	Bit clock input for input data.
8	V_{SS}	–	GND
9	$\overline{SCSL}$	I	At HIGH: System clock = 192fs, At LOW: System clock = 196fs
10	DGR	O	Nomally open.
11	DGL	O	Nomally open.
12	DOUT	O	Serial data output.
13	WDCO	O	Word clock output.
14	$\overline{LRCO}$	O	Output control clock (176.4KHz)
15	BCKO	O	Serial output Bit clock
16	V_{DD}	–	Power Supply +5V

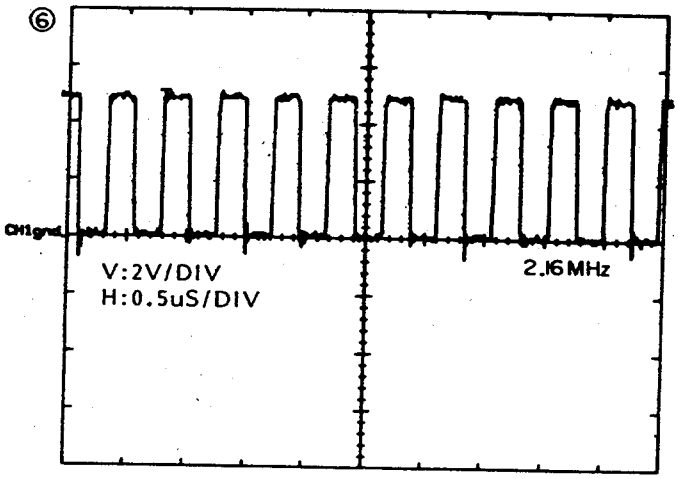
LC7881 (D/A CONVERTOR)

Pin No.	Name	DESCRIPTION
1	CH1 OUT	CH1 OUT output pin
2	VrefH1	Reference voltage "H" input pin 1 (Refer to Operation Description)
3	VrefH2	Reference voltage "H" input pin 2 (Refer to Operation Description)
4	V_{DD}	+5V power supply voltage
5	WCLK2	Word clock input #2 When IF is "H" level, WCLK2 must be "L" level. When IF is "L" level and WCLK2 goes LOW, an internal signal is generated that latches the data on the left digital audio channel.
6	LRCK	Left-right clock input. When "H" level, shows that the digital audio input is on the left - channel. when "L" level, on the right - channel.
7	WCLK1	Word clock input #1. When IF is "H" level and WCLK1 goes "L" level, an internal signal is generated that latches the data on both the right and left digital audio channels. When IF is "L" level WCLK1 goes "L" level, an internal signal is generated that latches the data on the right digital audio channel.
8	DATA	Digital audio data input. When IF is "H" level, data is input in bit-serial format from the most significant bit (MSB). When IF is "L" level, data is input in bit-serial format from the least significant bit (LSB).
9	BCLK	Bit clock input pin. Bit clock for reading in digital audio data in bit-serial format and the clock for the PWM DAC.
10	V_{DD}	+5V power supply voltage.
11	TST OUT	Test output, normally open.
12	TST1	Test input, normally grounded
13	TST2	Test input, normally grounded
14	IF	Interface toggle. Digital audio data is input MSB first when "H" level, and LSB when "L" level.
15	GND	Ground
16	VrefL1	Reference voltage "L" level input (Refer to Operation Description.)
17	GND	Ground
18	VrefL2	Reference voltage "L" level input (Refer to Operation Description.)
19	NC	No connection
20	CH2 OUT	CH2 out output pin

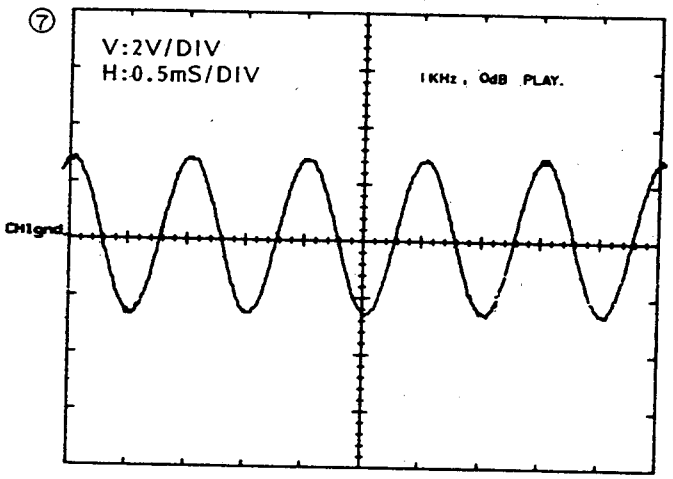
⑤


CH1gnd
V:2V/DIV
H:10uS/DIV
44.1KHz

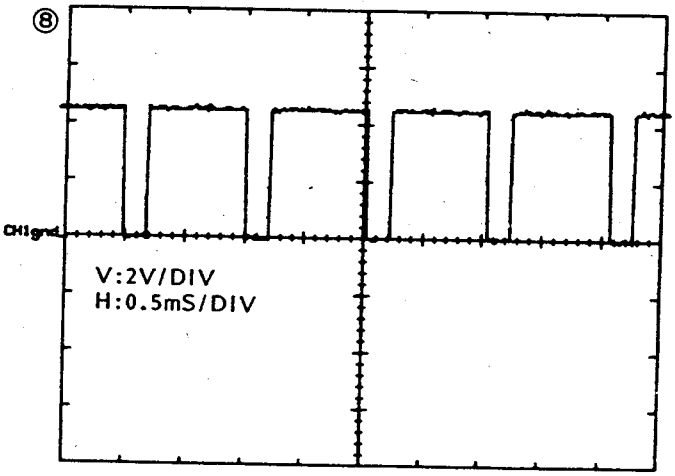
⑥


CH1gnd
V:2V/DIV
H:0.5uS/DIV
2.16MHz

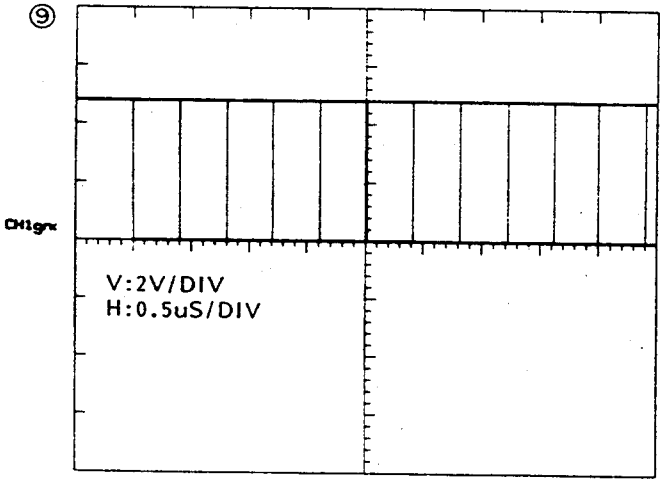
⑦


V:2V/DIV
H:0.5mS/DIV
1KHz, 0dB PLAY.
CH1gnd

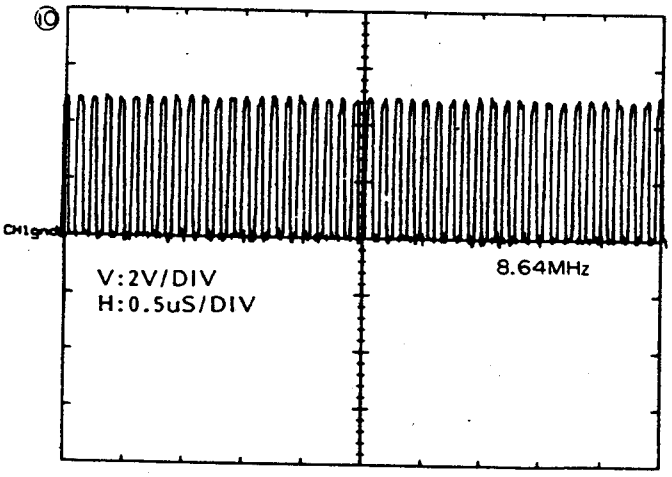
⑧


CH1gnd
V:2V/DIV
H:0.5mS/DIV

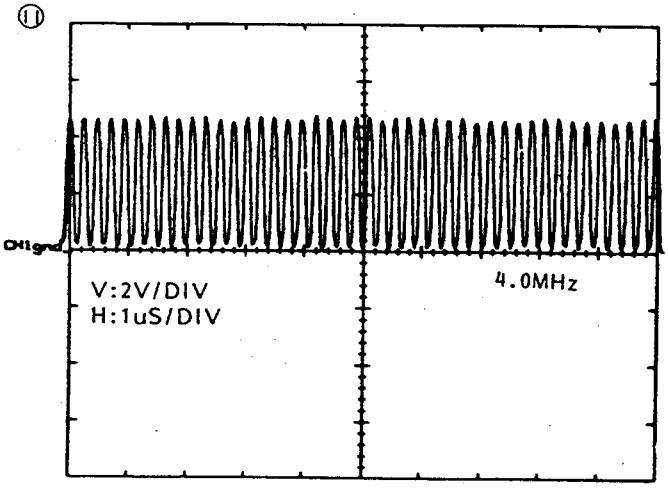
⑨


CH1gnd
V:2V/DIV
H:0.5uS/DIV

⑩

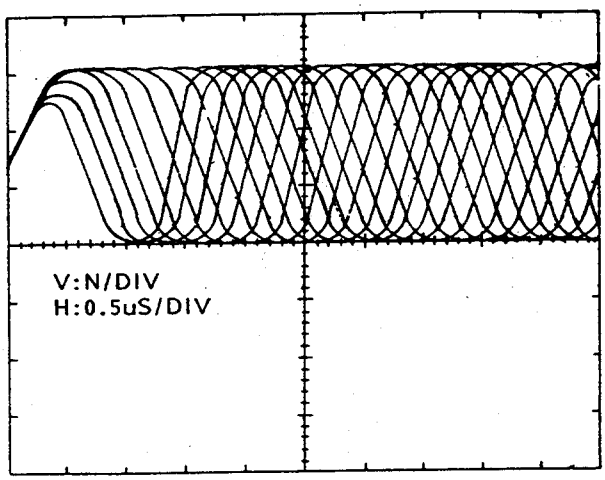

CH1gnd
V:2V/DIV
H:0.5uS/DIV
8.64MHz

⑪


CH1gnd
V:2V/DIV
H:1uS/DIV
4.0MHz

■ WAVEFORMS AT THE POINT NUMBER ON THE SCHEMATIC DIAGRAM

TP1



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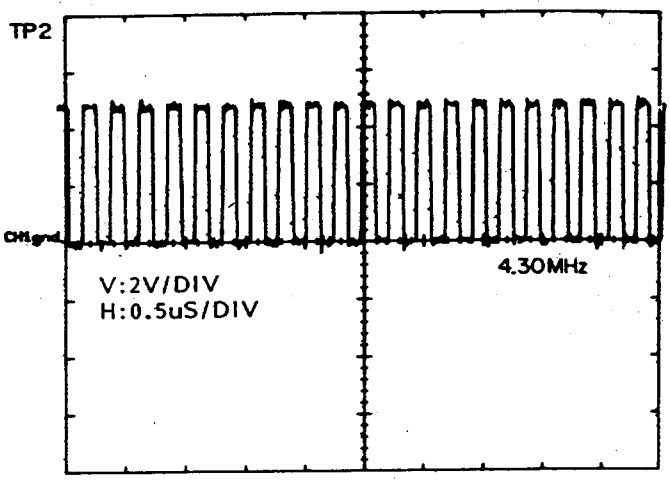

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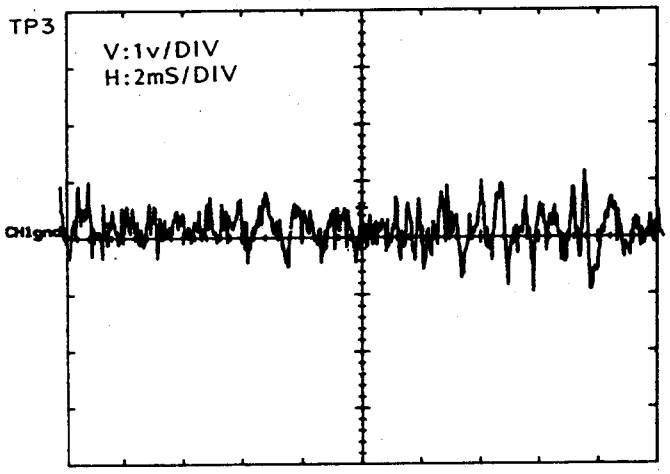

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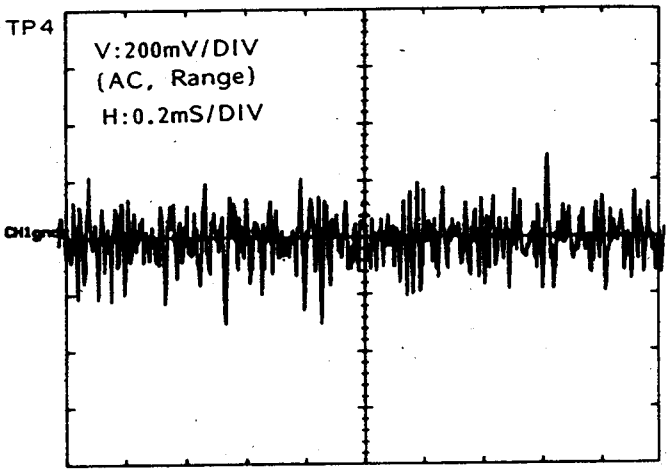

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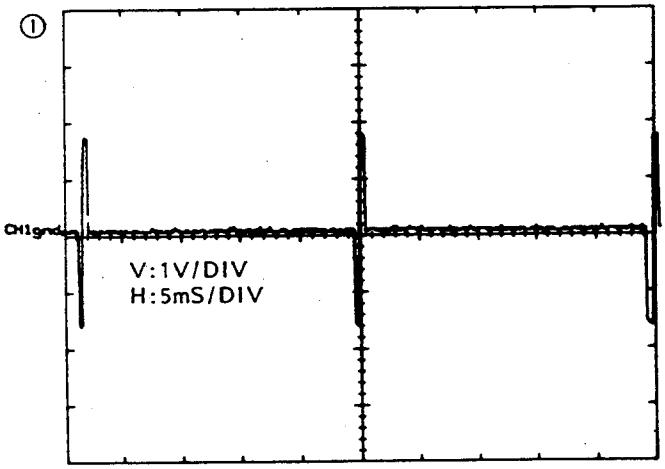

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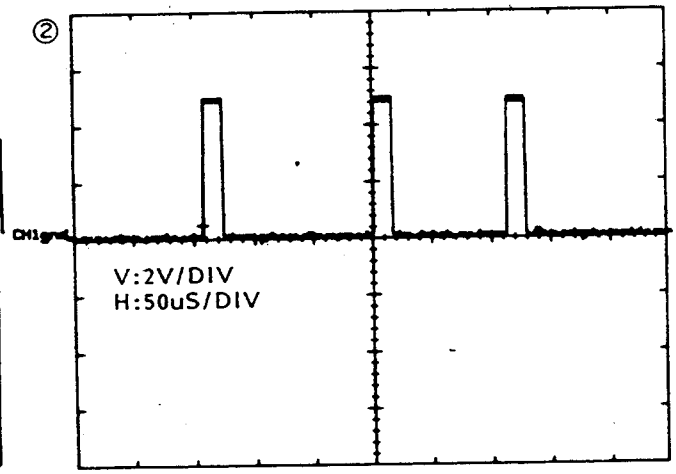

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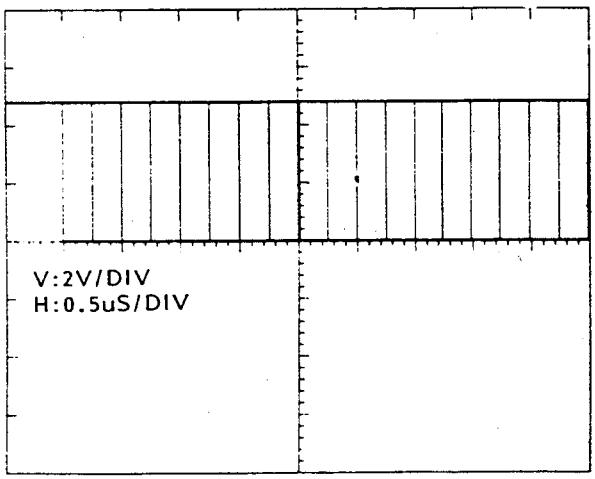

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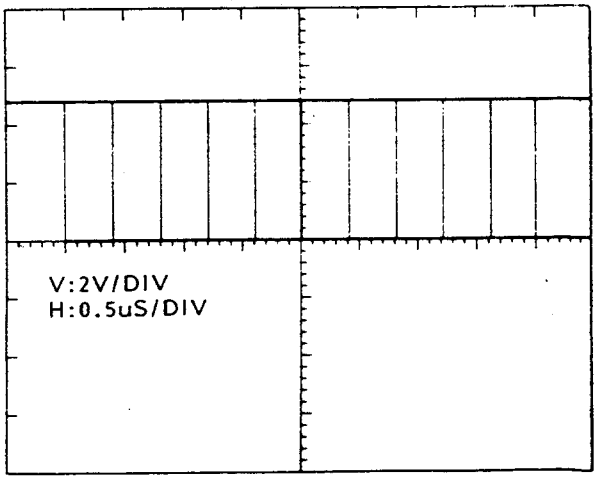
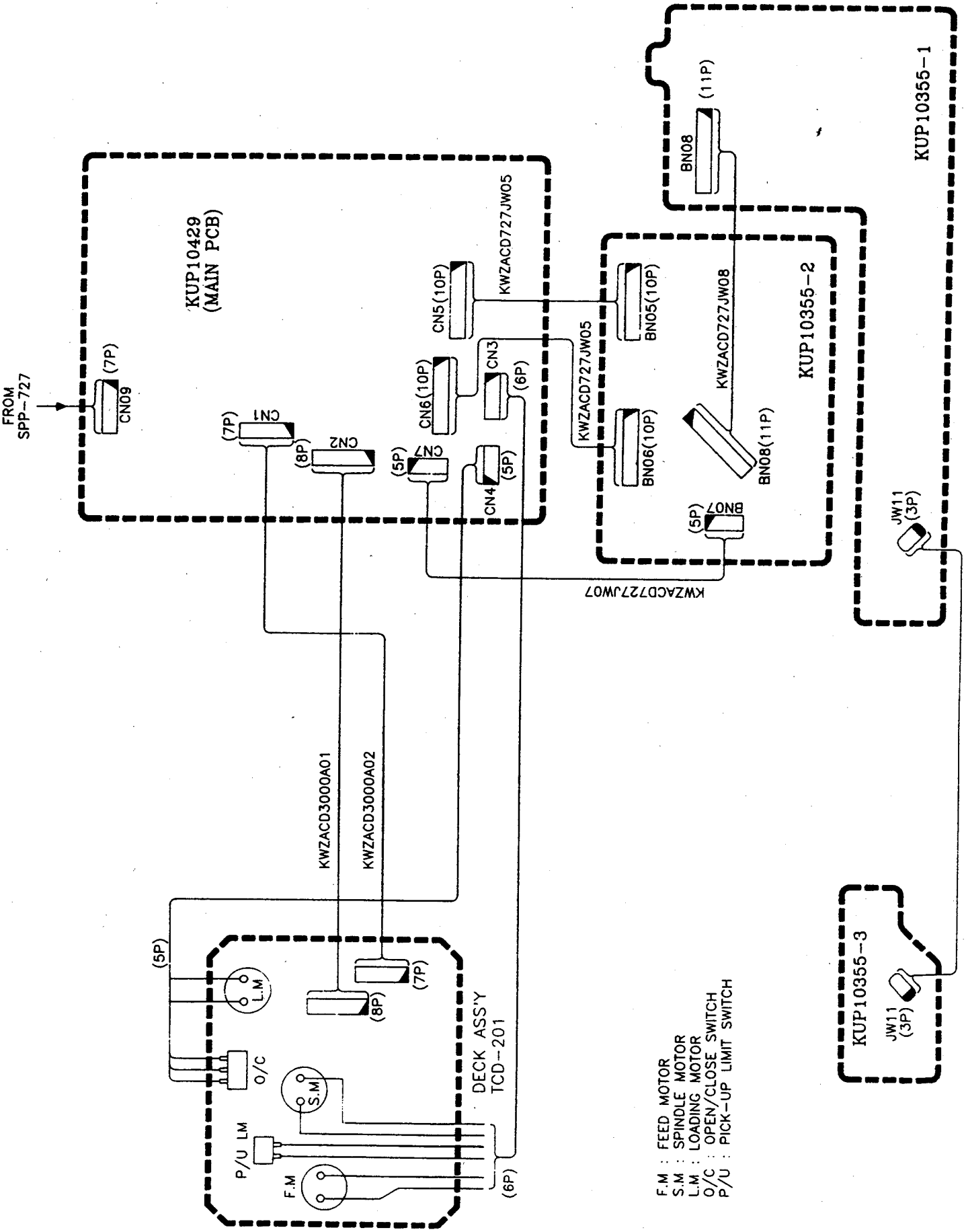
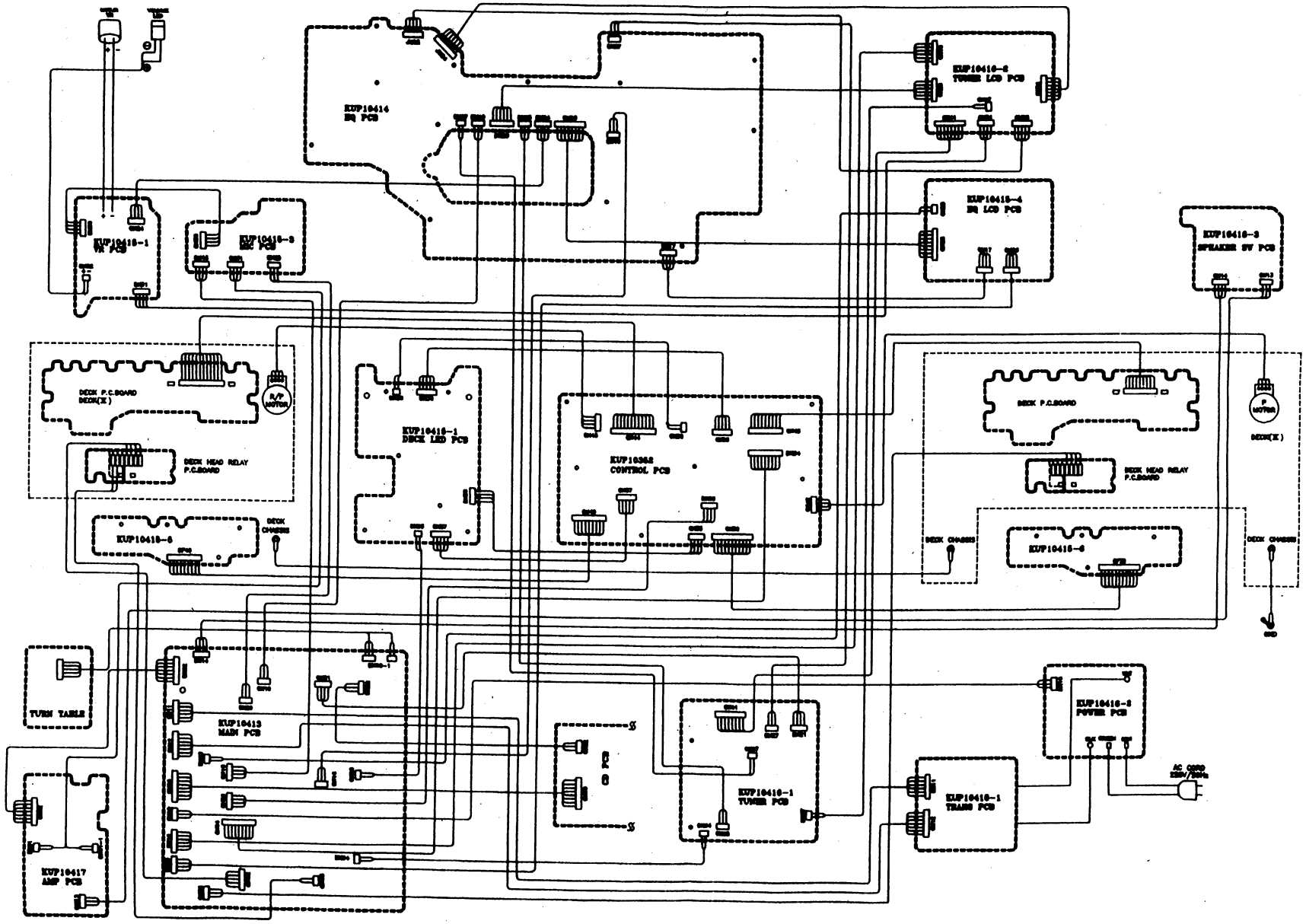


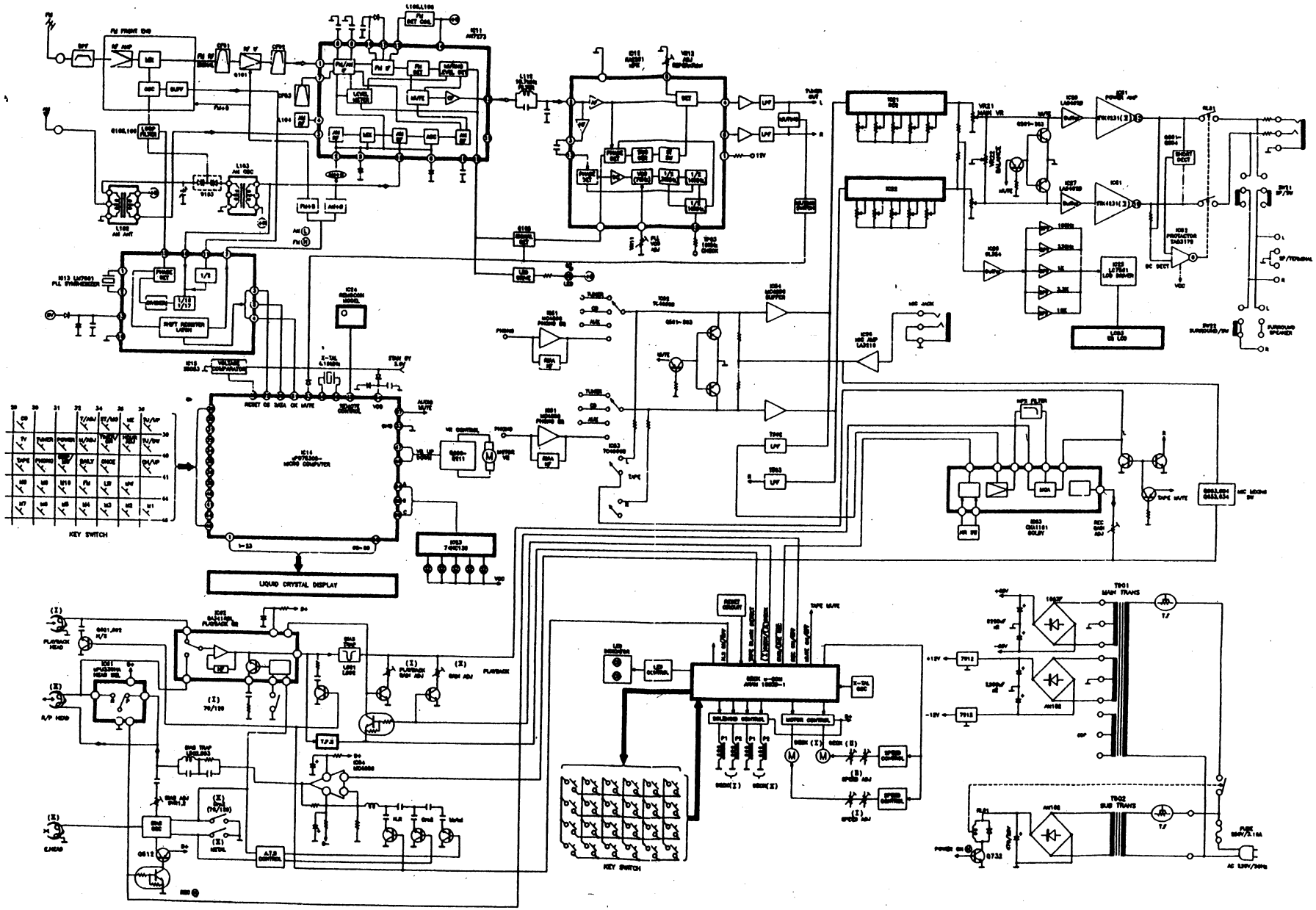
CDP WIRING DIAGRAM



MAIN WIRING DIAGRAM



MAIN BLOCK DIAGRAM



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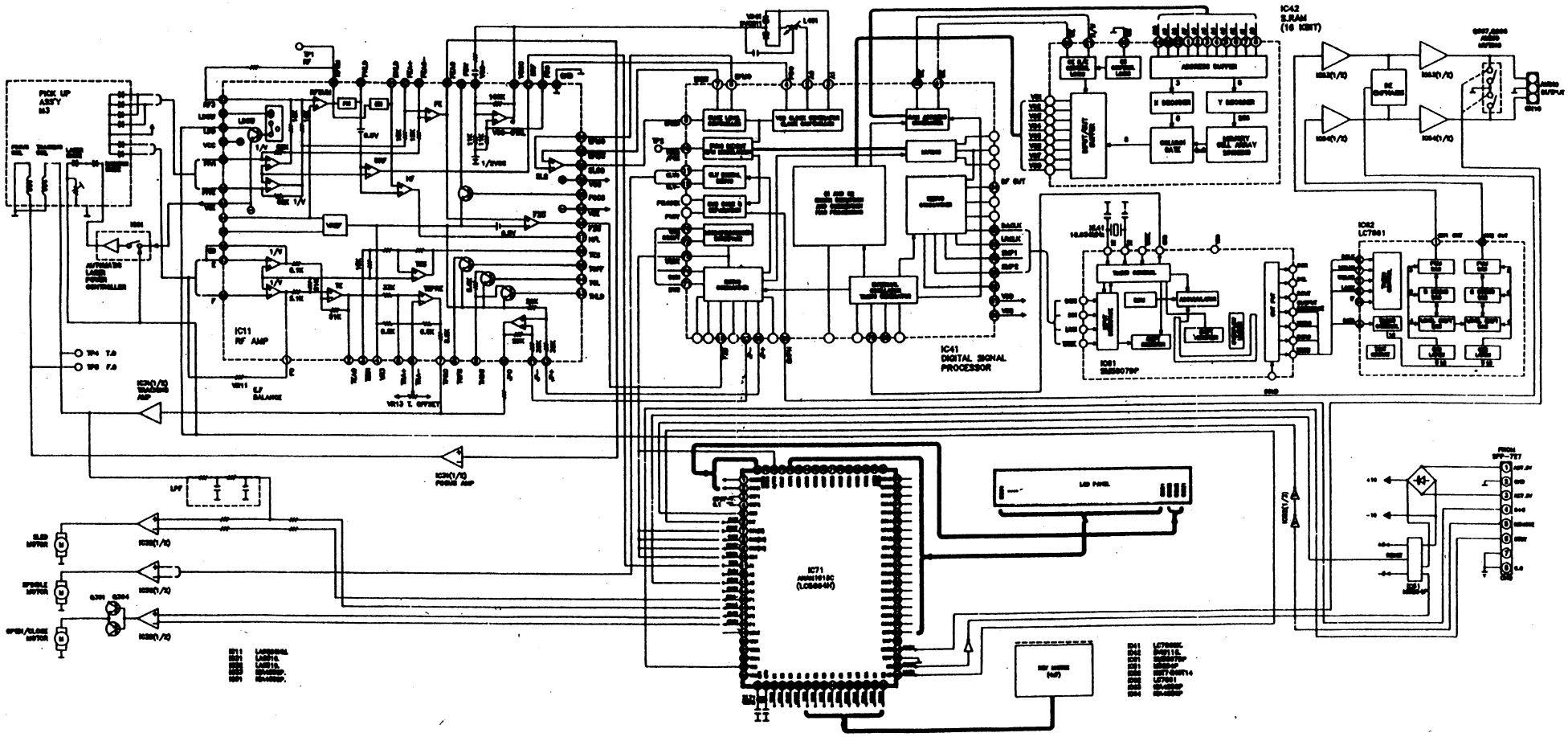
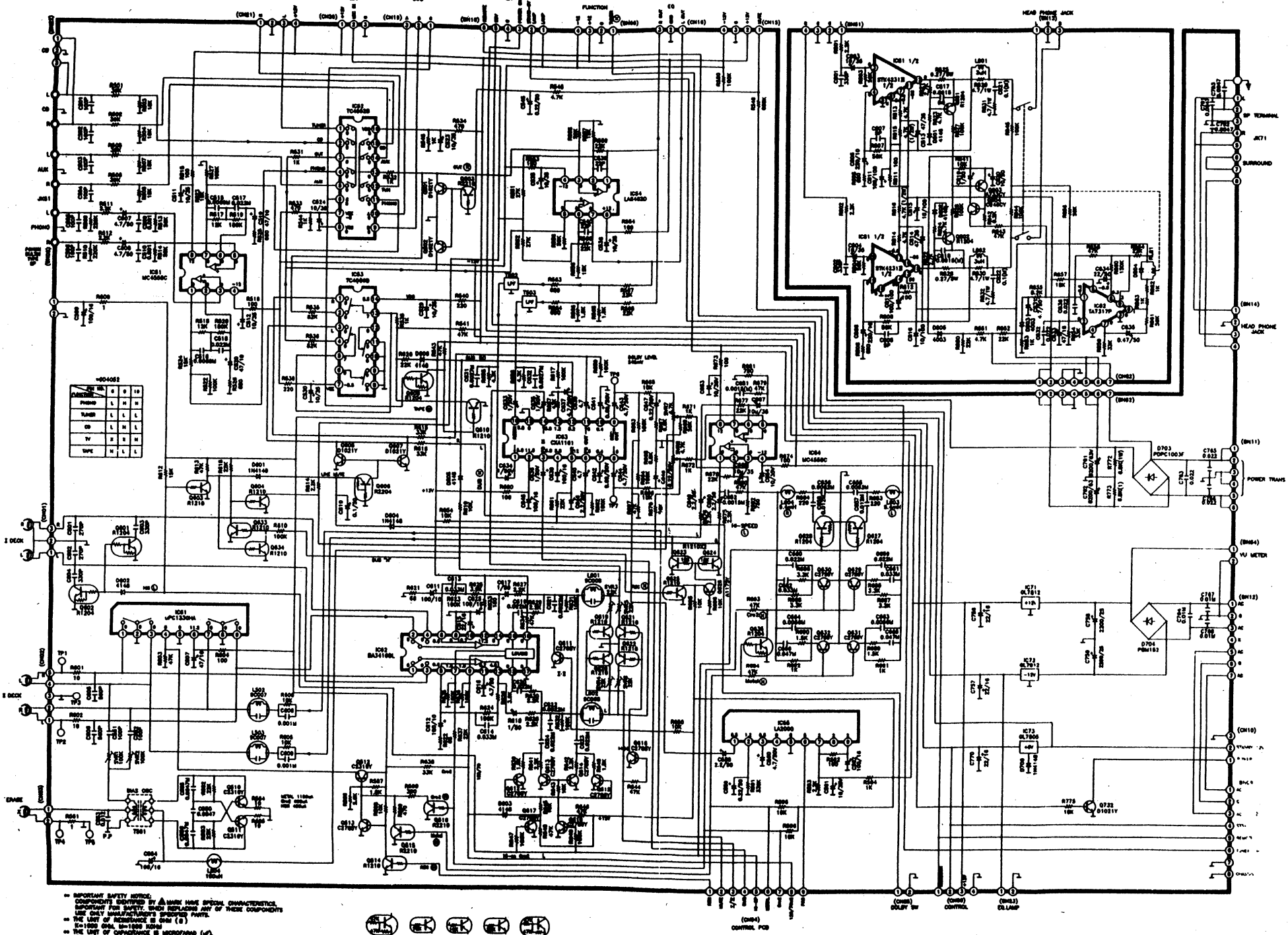


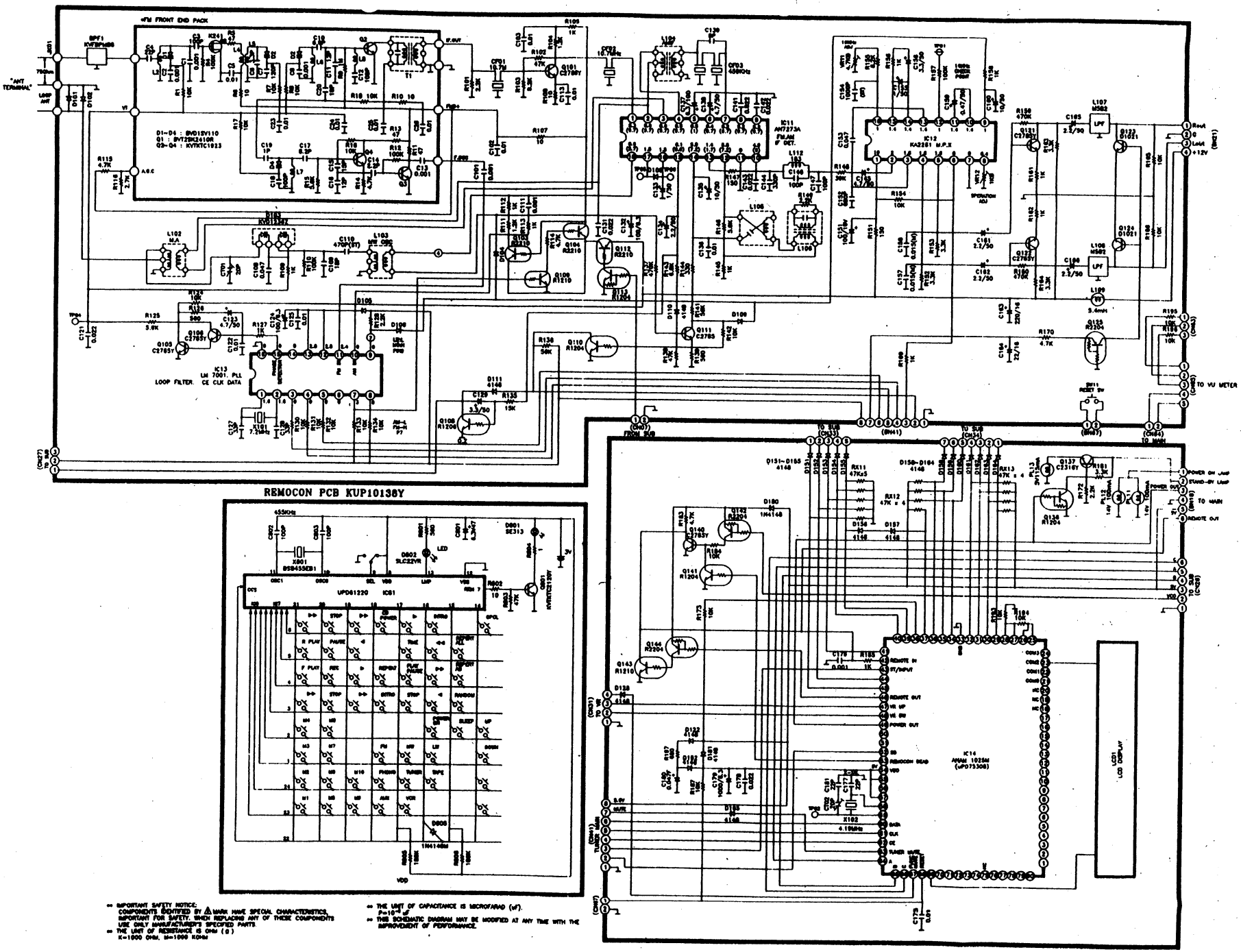
MAIN SCHEMATIC DIAGRAM



** IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY ⚠ MARK HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS USE ONLY MANUFACTURER'S SPECIFIED PARTS.
** THE UNIT OF RESISTANCE IS OHM (Ω)
K=1000 OHM, M=1000 KOHM
** THE UNIT OF CAPACITANCE IS MICROFARAD (uF).
P=uuF
** THIS SCHEMATIC DIAGRAM MAY BE MODIFIED AT ANY TIME WITH THE IMPROVEMENT OF PERFORMANCE.

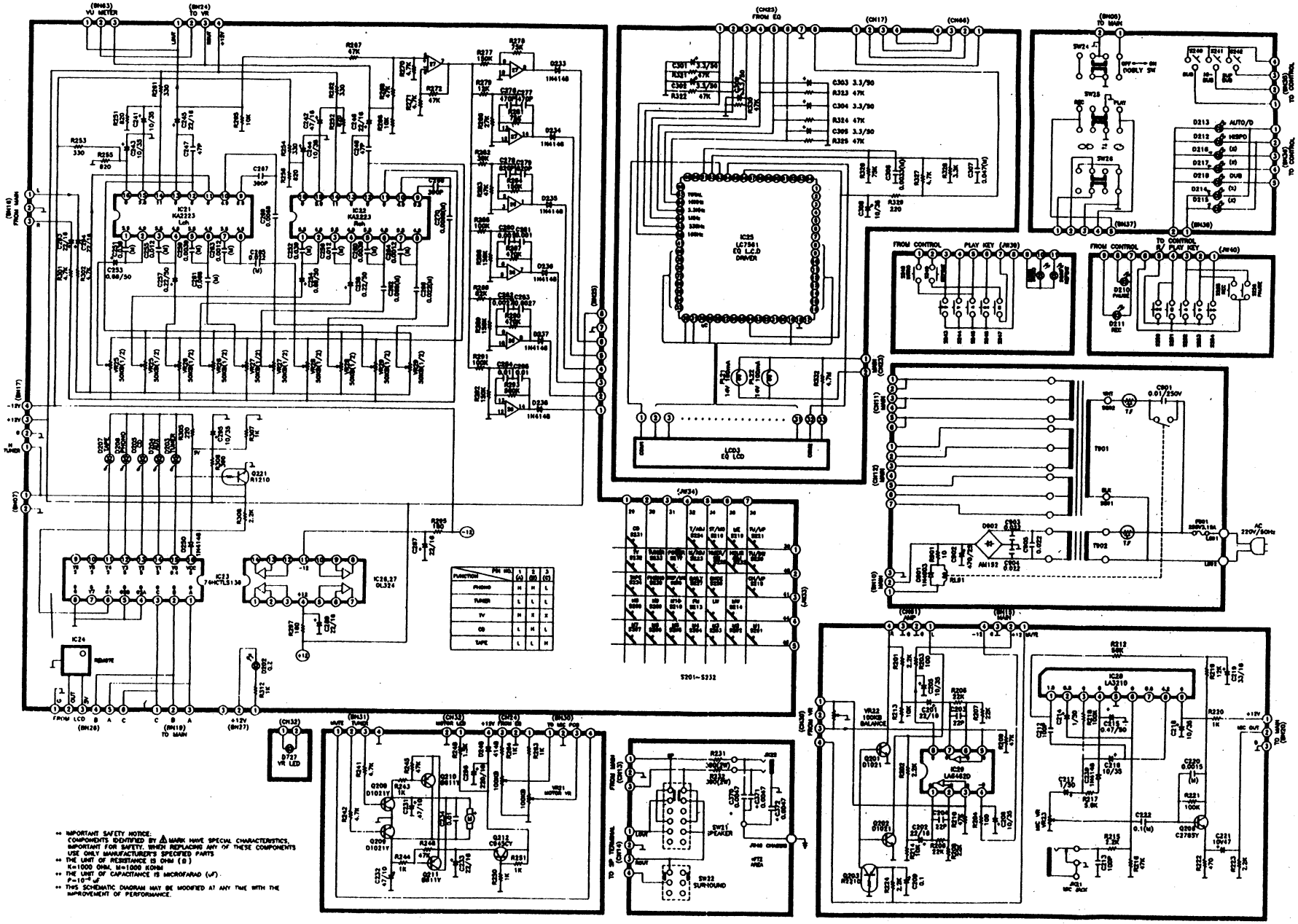
KSR1204 KSR1210 KSR2210 KSR1211 KSR2204

TUNER SCHEMATIC DIAGRAM

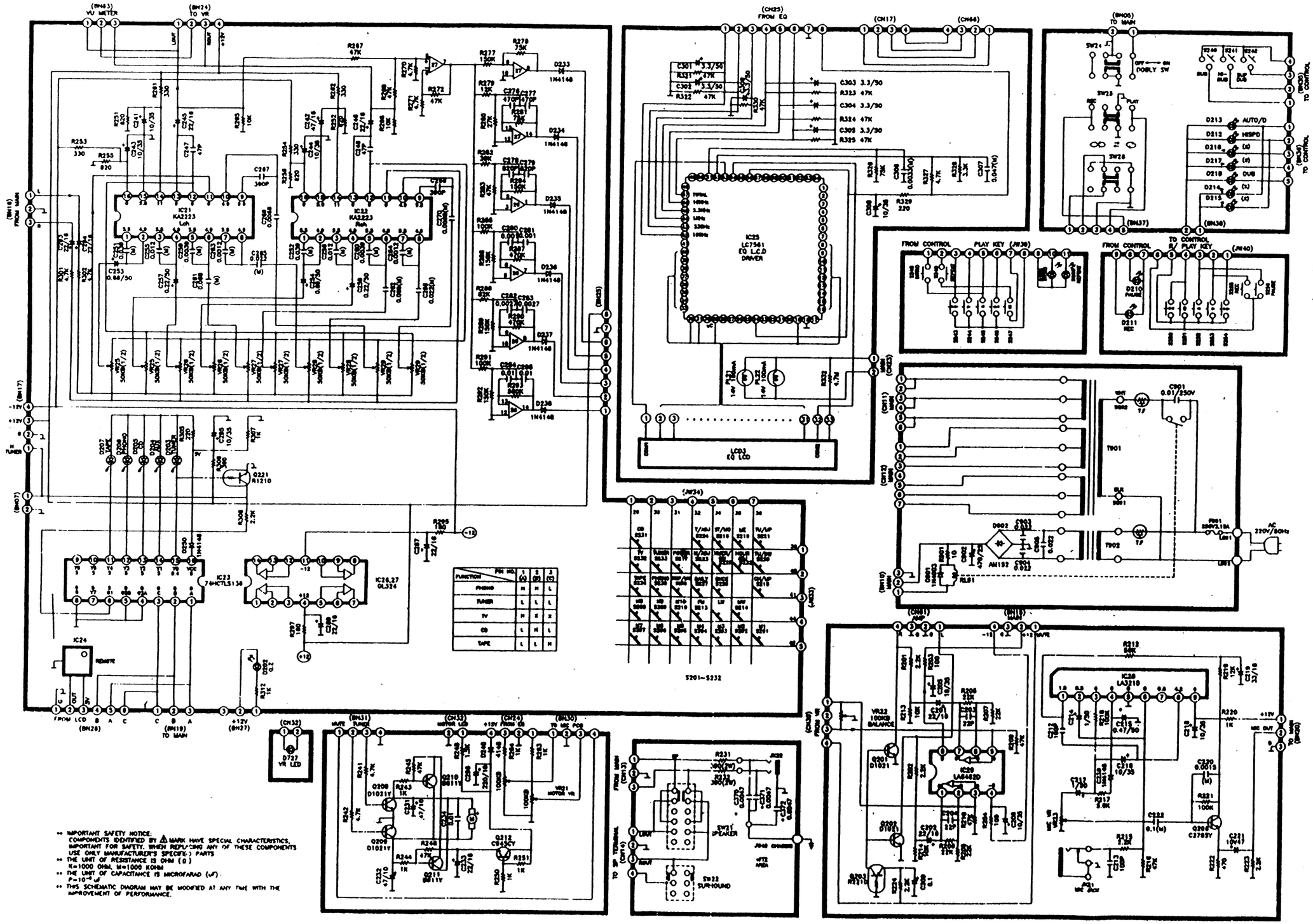


* IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY ⚠ MARK HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS USE ONLY MAKER/MANUFACTURER'S SPECIFIED PARTS.
* THE UNIT OF RESISTANCE IS OHM (Ω)
K=1000 OHM, M=1000 KOHM
* THE UNIT OF CAPACITANCE IS MICROFARAD (uF).
P=10^-6 uF
** THIS SCHEMATIC DIAGRAM MAY BE MODIFIED AT ANY TIME WITH THE IMPROVEMENT OF PERFORMANCE.

SUB SCHEMATIC DIAGRAM

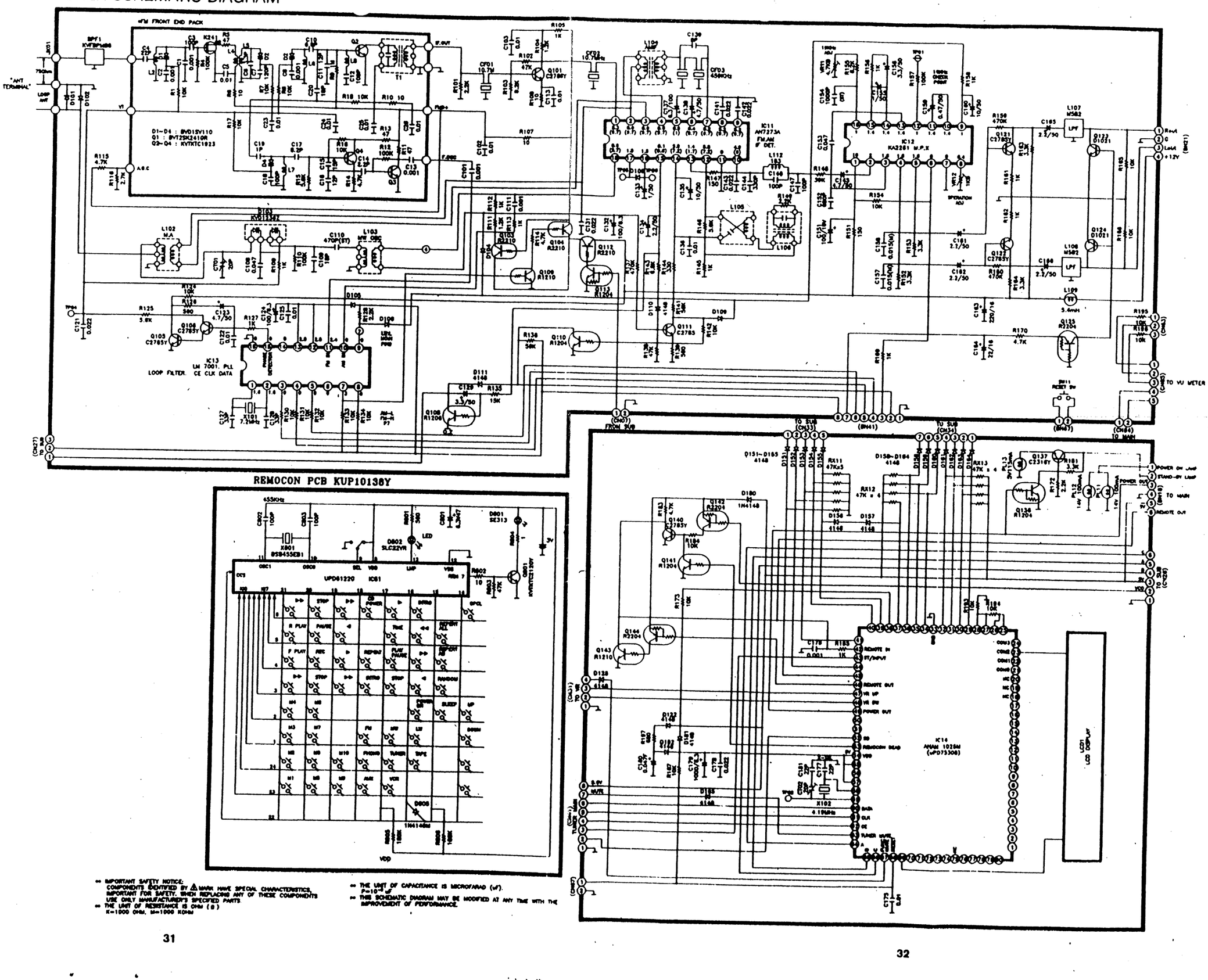


SUB SCHEMATIC DIAGRAM



** IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY ⚠ MARK HAVE SPECIAL CHARACTERISTICS, IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS USE ONLY MANUFACTURER'S SPECIFIED PARTS
** THE UNIT OF RESISTANCE IS OHM (Ω)
K=1000 OHM, M=1000 KOHM
** THE UNIT OF CAPACITANCE IS MICROFARAD (uF)
P=10⁻⁶ uF
** THIS SCHEMATIC DIAGRAM MAY BE MODIFIED AT ANY TIME WITH THE IMPROVEMENT OF PERFORMANCE.

TUNER SCHEMATIC DIAGRAM

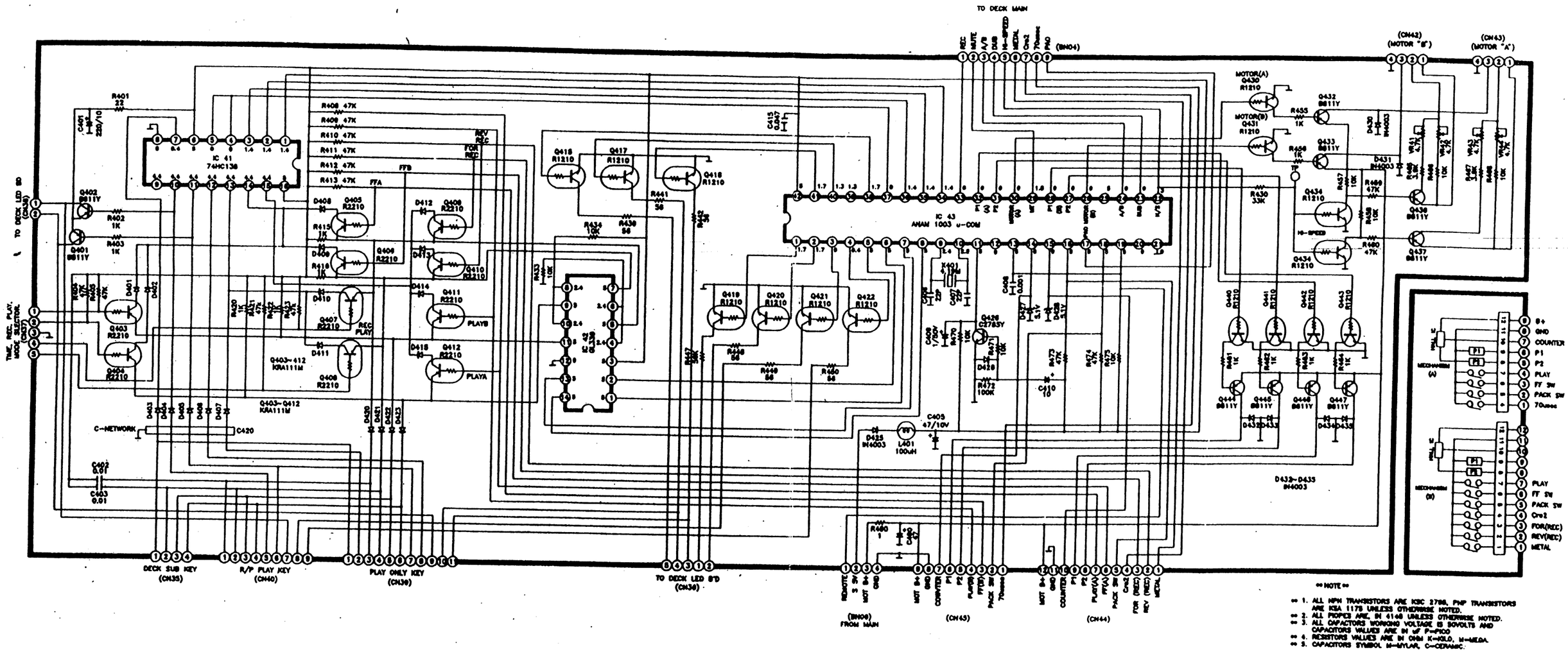


REMOCON PCB KUP10136Y

※ IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY ⚠ MARK HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS USE ONLY MANUFACTURER'S SPECIFIED PARTS
※ THE UNIT OF RESISTANCE IS OHM (Ω)
K=1000 OHM, M=1000 KOHM

※ THE UNIT OF CAPACITANCE IS MICROFARAD (uF).
P=10^-6 uF
※ THIS SCHEMATIC DIAGRAM MAY BE MODIFIED AT ANY TIME WITH THE IMPROVEMENT OF PERFORMANCE.

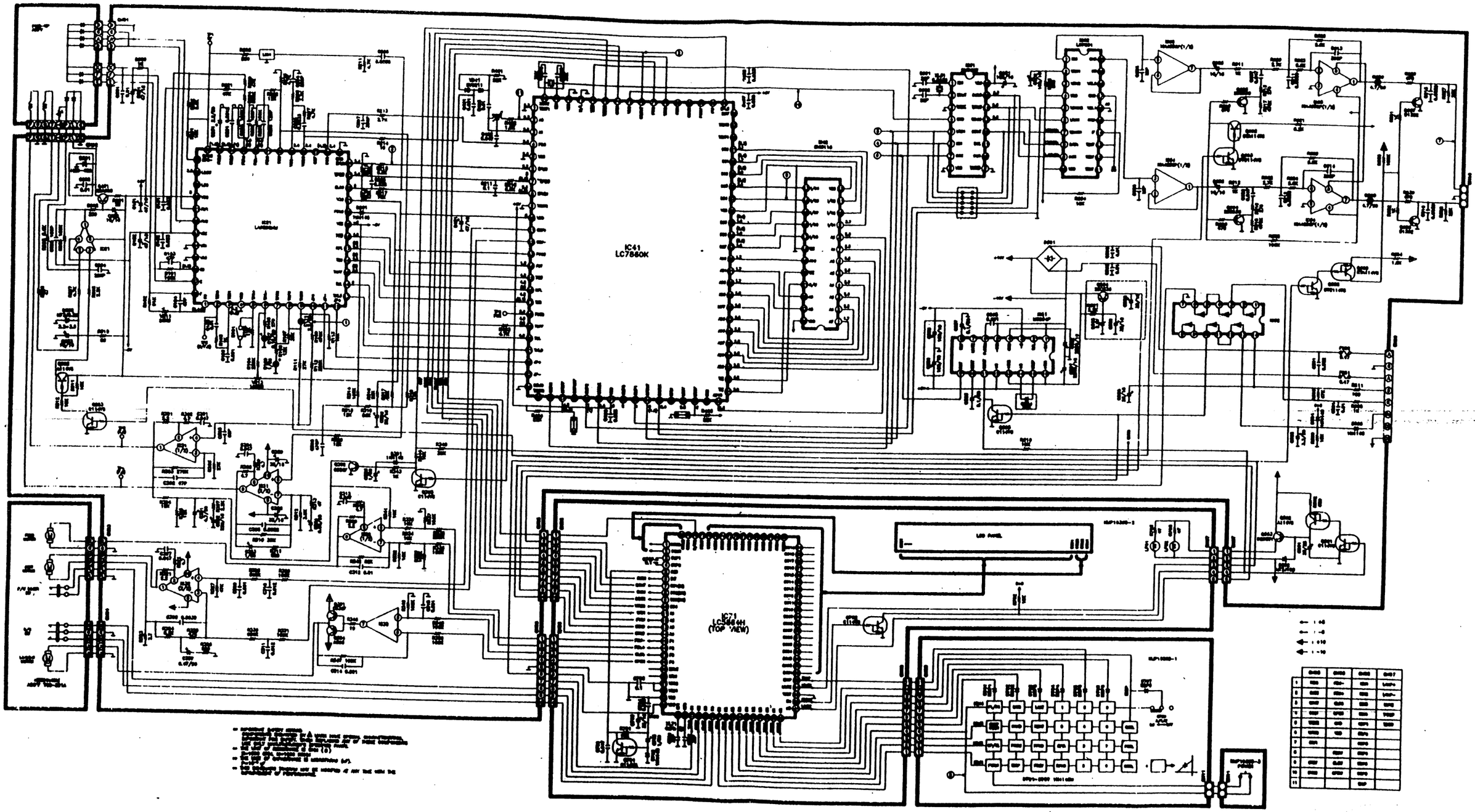
LOGIC CONTROL



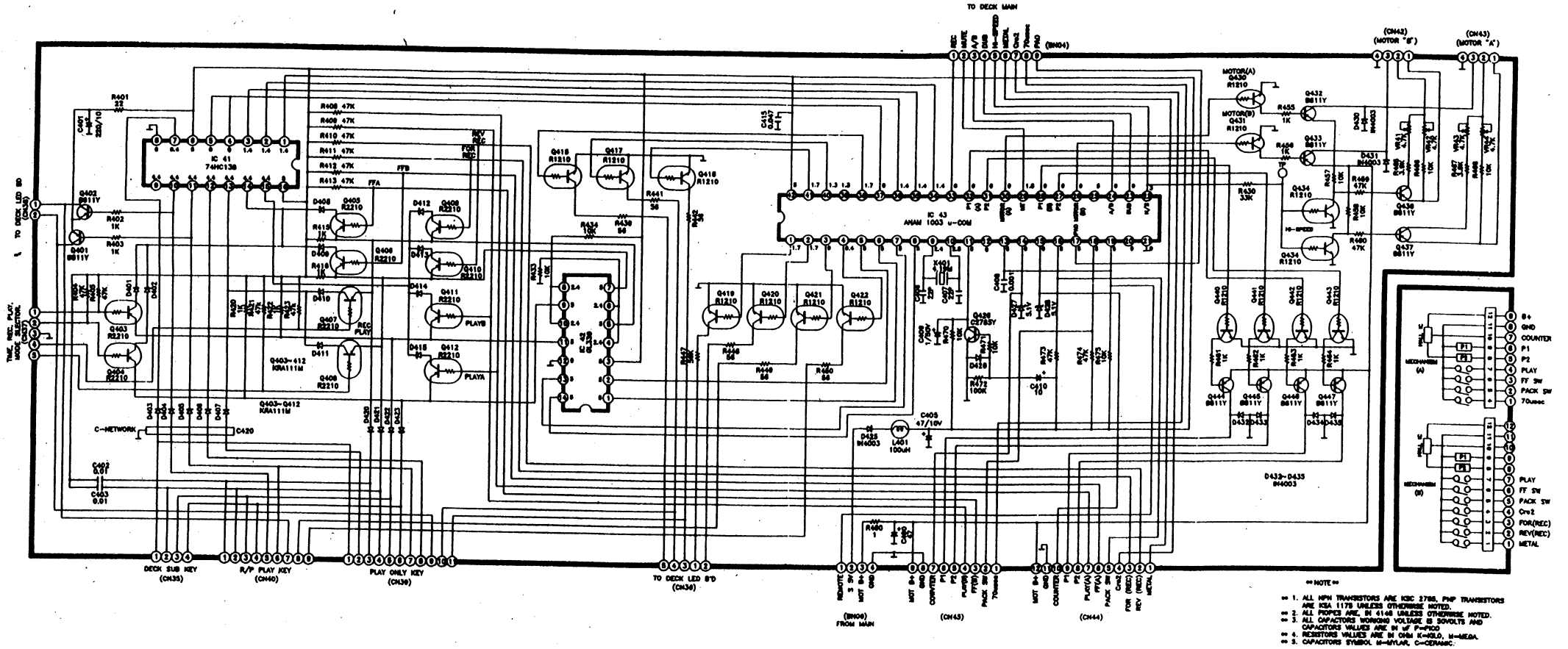
** NOTE **

** 1. ALL NPN TRANSISTORS ARE KSC 2786, PNP TRANSISTORS ARE KSA 1178 UNLESS OTHERWISE NOTED.
** 2. ALL DIODES ARE, IN 4148 UNLESS OTHERWISE NOTED.
** 3. ALL CAPACITORS WORKING VOLTAGE IS 50VOLTS AND CAPACITORS VALUES ARE IN uF P=PICO
** 4. RESISTORS VALUES ARE IN OHM K=KILO, M=MEGA.
** 5. CAPACITORS SYMBOL M=MYLAR, C=CERAMIC.

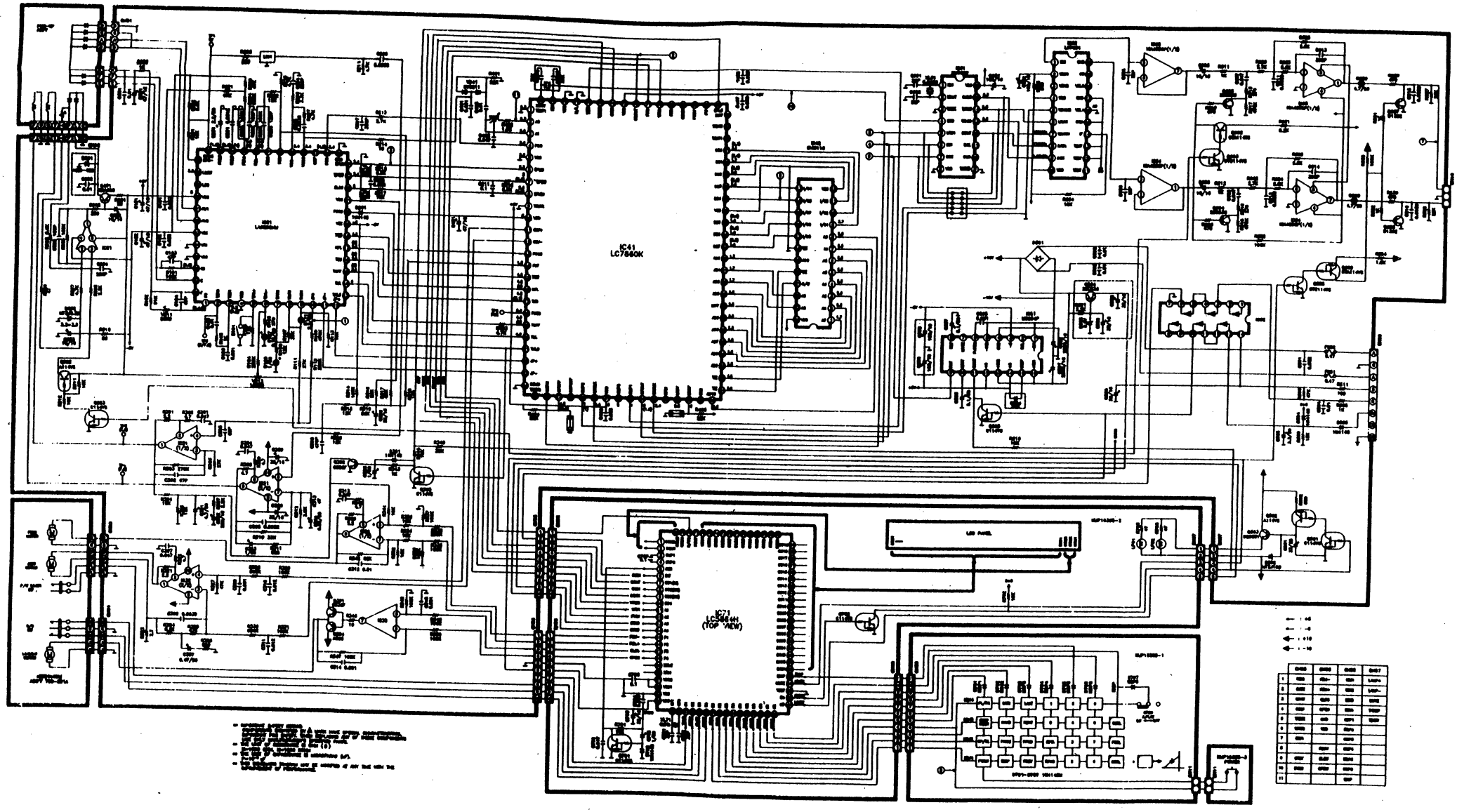
CDP SCHEMATIC DIAGRAM



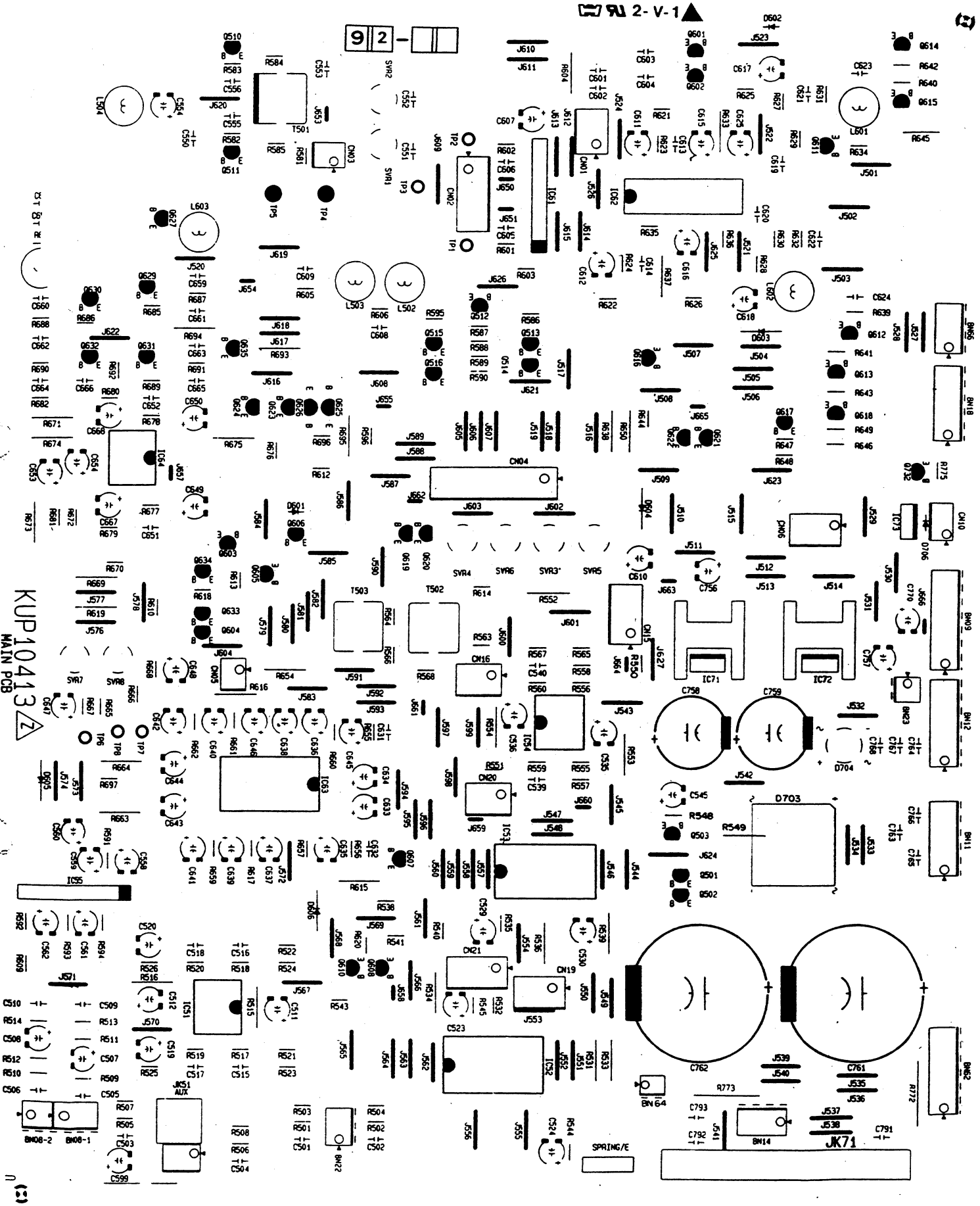
LOGIC CONTROL



CDP SCHEMATIC DIAGRAM

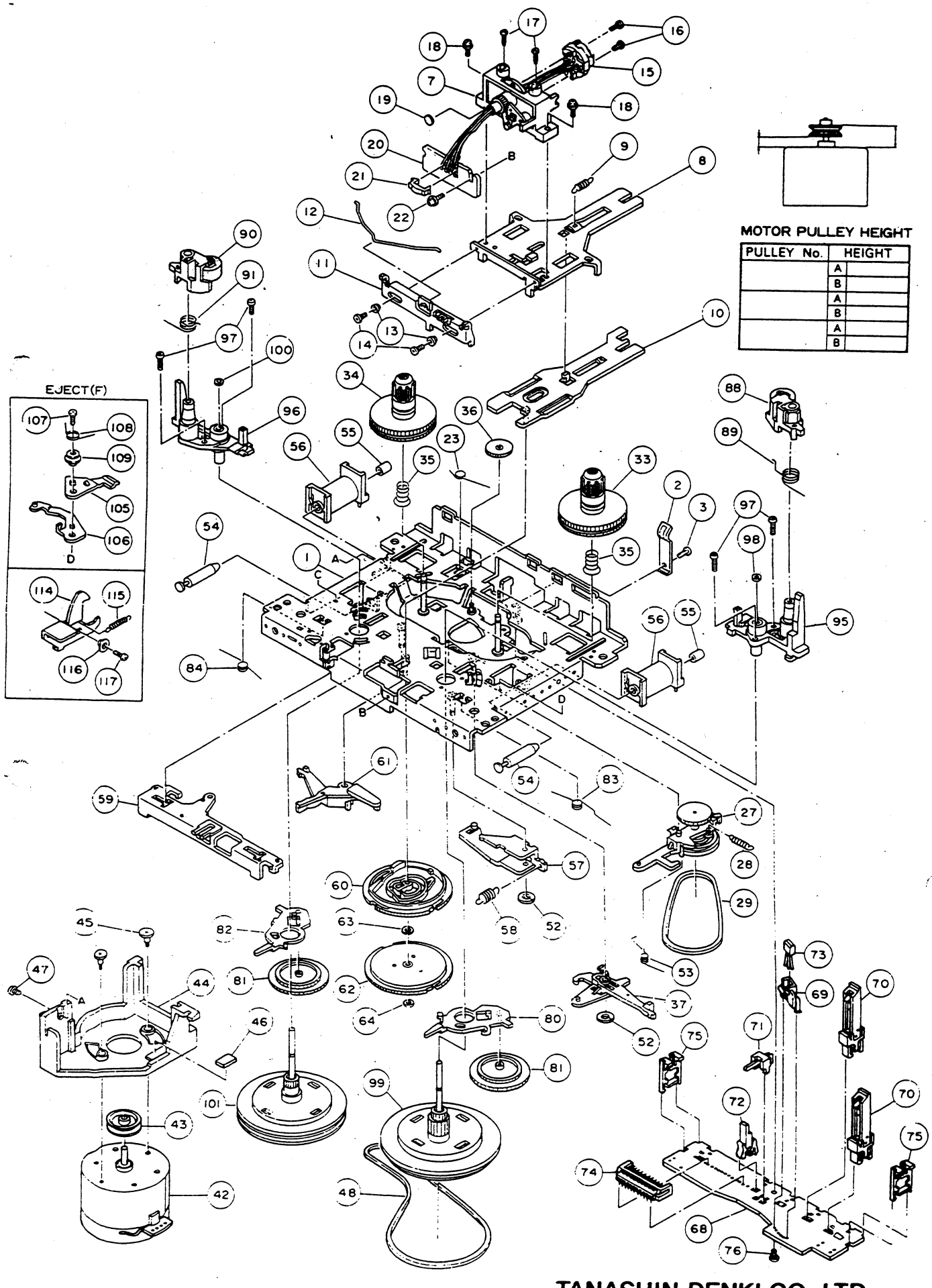


MAIN PCB



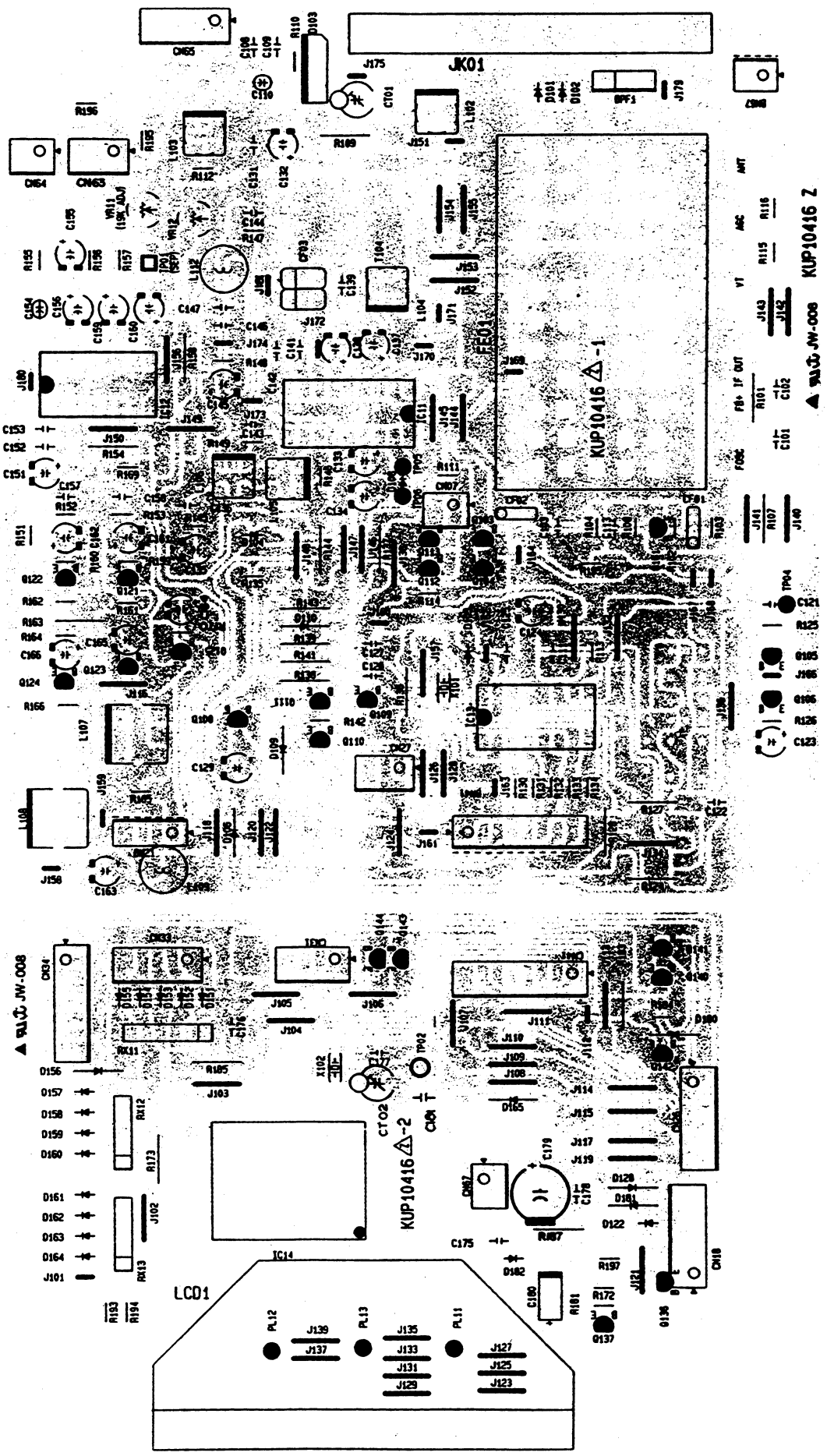
TANASHIN

MODEL TN-1800Z-///P



TANASHIN DENKI CO., LTD.

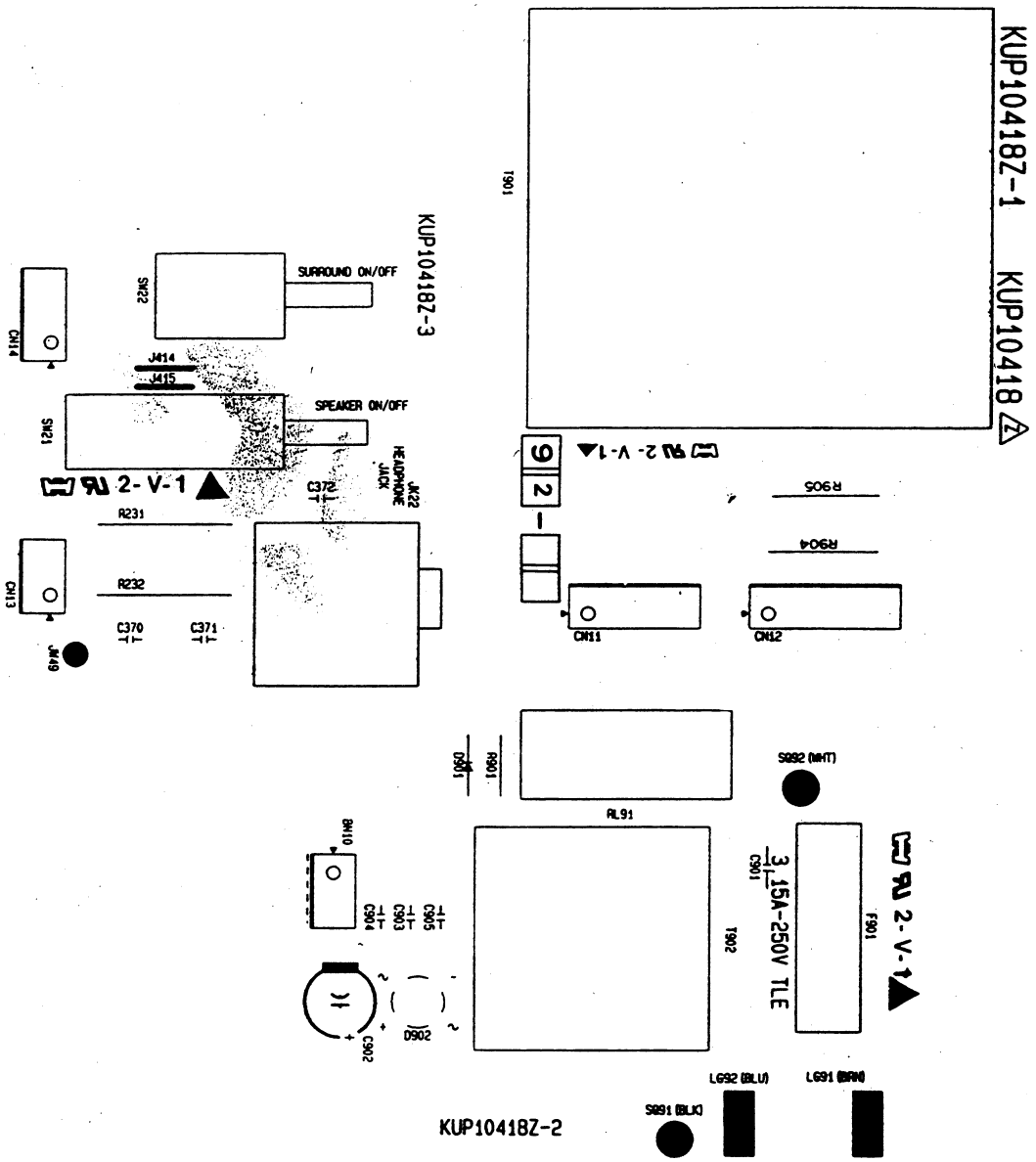
TUNER PCB

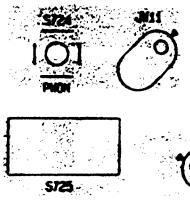


SUB PCB

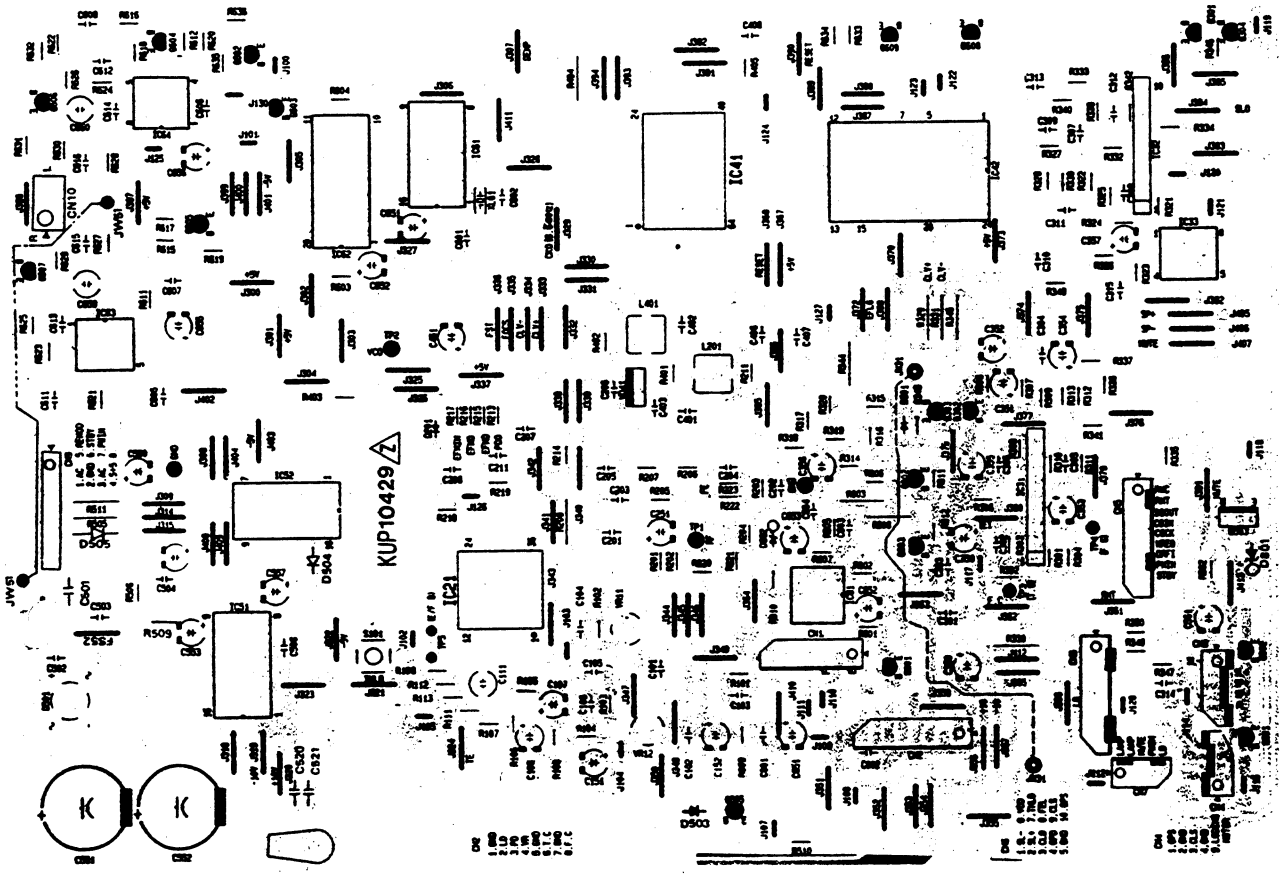
AMP PCB

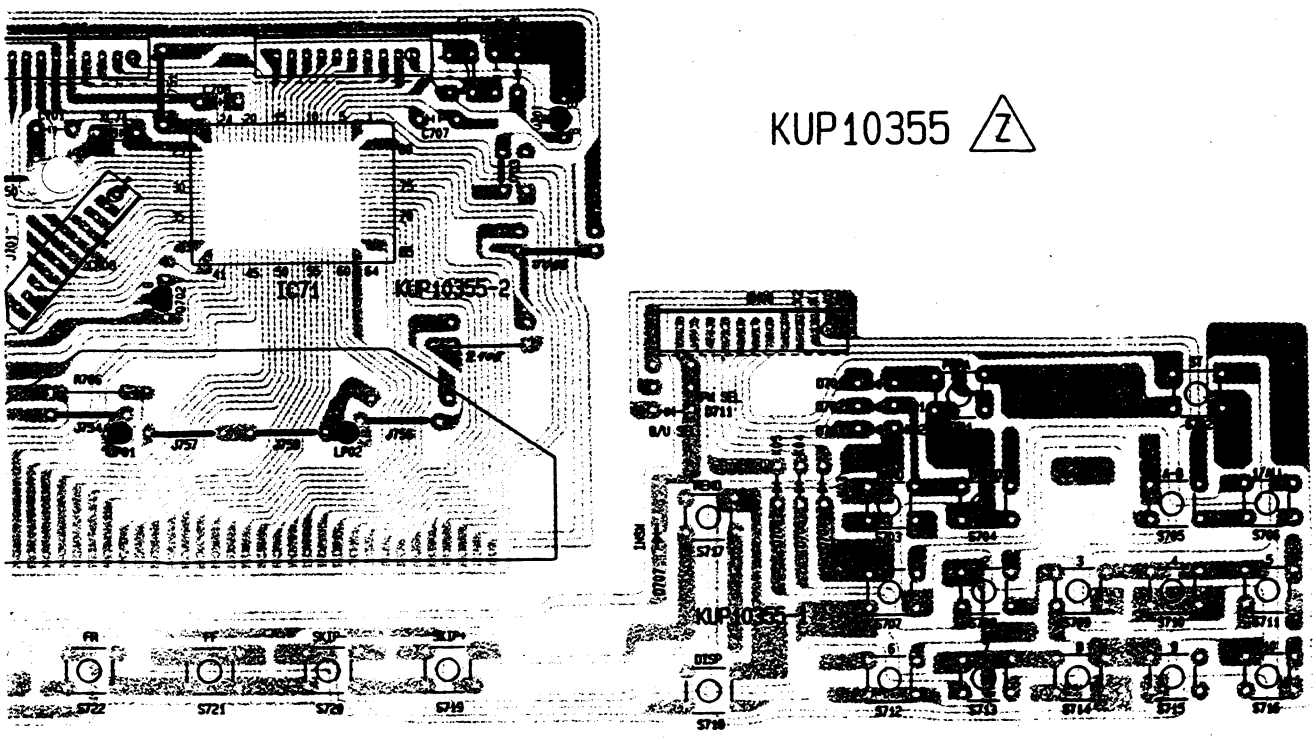
POWER PCB


KUP10418Z-1
KUP10418
KUP10418Z-3
SURROUND ON/OFF
SPEAKER ON/OFF
HEADPHONE JACK
J414
J415
R231
R232
C370
C371
C372
R905
R904
CN11
CN12
S892 (WHT)
RL91
C901
3.15A-250V TLE
F901
D902
C902
S891 (BLK)
LG92 (BLU)
LG91 (BRN)
KUP10418Z-2


KUP10355-3

CDP PCB


KUP10429 Z
IC41
IC21
IC31
R509
D505
D504
D503
D501
JW01
JW03
CN10


KUP10355 Z
IC71
KUP10355-2
KUP10355-1
S722
S721
S720
S719
S712
S713
S714
S715
S716

No.	PARTS No.	DESCRIPTION	Q'TY		
1	1888 01 501	CHASSIS ASS'Y	1		
2	1880 01 02	PACK SPRING	1	747 341 6	
3	9P11 20 032	C TAPPING SCREW M2x3 (SPECIAL)	1		
4					
5					
6					
7	1880 02 301	HEAD BASE ASS'Y	1		
8	1888 02 02	HEAD PANEL (A)	1		
9	1880 02 21	RC SPRING (V)	1		
10	1888 02 501	HEAD PANEL (B) ASS'Y	1		
11	1880 02 06	CHP LEVER	1		
12	1880 04 05	PINCH ROLLER SP	1	747 361 4	
13	1865 02 28	CHP LEVER COLLAR	2		
14	9C01 17 301	SCREW (FOR CAMERA) M1.7x3	2		
15	6202 07 13	HEAD YK50P-BA405	1	747 348 2	747 344 0
16	9F13 16 482	HEAD COLLAR SCREW S	2		
17	9P15 20 063	⊕⊖ SCREW	2		
18	9P02 20 051	TAMS SCREW M2x5	2		
19	1865 09 61	SPACER	1		
20	1865 02 66	RELAY BOARD	1	747 342 4	
21	1865 02 49	WIRE CLAMP	1		
22	9P12 20 051	S TAMS TAPPING SCREW M2x5	1		
23	1888 02 04	HEAD PANEL SPRING	1		
24					
25					
26					
27	1888 07 301	RF CLUTCH ASS'Y	1	747 346 5	
28	1888 07 09	RF PULLEY ARM SPRING	1		
29	1888 07 10	RF BELT	1	747 345 7	
30					
31					
32					
33	1888 05 305	T REEL ASS'Y (F)	1	747 347 3	
34	1888 05 306	T REEL ASS'Y (R)	1	747 348 1	
35	1880 05 22	B.T SPRING (R)	2	747 364 2	
36	1888 05 08	FF GEAR	1	747 349 9	
37	1888 05 09	RF TRIGGER ARM	1		
38			1		
39					
40					
41					
42	6003 03 44	MOTOR SHU-2L00	1	745 055 4	
43	1880 09 32	MOTOR PULLEY	1	747 351 5	
44	1888 12 02	MOTOR BRACKET	1		
45	1921 12 02	MOTOR COLLAR SCREW	2		
46	1820 13 12	MAT	1		
47	9P04 20 051	C TAPPING SCREW M2x5	1		
48	1880 09 10	M BELT	1	747 310 7	
49					
50					
51					
52	9W06 40 040	HLW CUT 2.1x5x0.4	2		
53	1888 21 09	TRIGGER ARM SPRING	1		
54	1880 21 05	PLUNGER	2	747 363 0	
55	1880 21 06	PLUNGER HOLDER	2		
56	1888 21 08	SOLENOID	2	747 354 9	
57	1888 21 04	P KICK LEVER	1		
58	1880 21 11	PK LEVER SPRING	1		
59	1888 21 01	CH SLIDE LEVER	1		
60	1888 21 02	M GEAR	1	747 352 3	

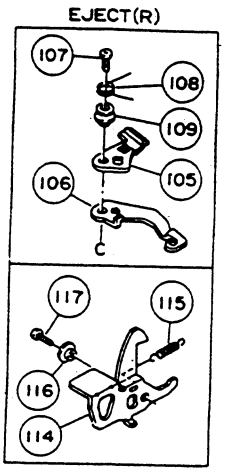
S LIST

TN-1800Z-///P

No.	PARTS No.	DESCRIPTION	Q'TY		
61	1888 21 03	M TRIGGER ARM	1	747 353 1	
62	1888 21 05	RF CAM GEAR	1		
63	9E01 00 202	E RING φ2.0	1		
64	9W06 50 040	HLW CUT 1.55x3.5x0.5	1		
65					
66					
67					
68	1888 53 01	P BASE	1		
69	1888 53 03	IC PROTECTOR	1	7	
70	6401 01 193	MTS-10431MVJO	2	747 360 6	
71	6401 01 194	MSW-1821MVDO	1	747 367 1	
72	6401 01 195	MCV-0051MVDO	1		
73	6804 06 04	HALL IC LB9050TN	1	747 361 9	
74	6815 02 03	CONNECTOR TXL-P09PM1	1		
75	1888 53 04	P BASE STAD	2		
76	9P04 20 041	C TAPPING SCREW M2x4	1		
77					
78					
79					
80	1888 05 501	T GEAR ARM (F) ASS'Y	1		
81	1888 05 07	T GEAR	2	747 357 6	
82	1888 05 502	T GEAR ARM (R) ASS'Y	1		
83	1888 05 13	TG ARM (F) SPRING	1		
84	1888 05 14	TG ARM (R) SPRING	1		
85					
86					
87					
88	1888 04 301	PINCH ROLLER ARM (F) ASS'Y	1	747 356 4	
89	1880 04 03	P ARM (F) SPRING	1	747 364 8	
90	1888 04 302	PINCH ROLLER ARM (R) ASS'Y	1	747 357 2	
91	1880 04 04	P ARM (R) SPRING	1	747 361 5	
92					
93					
94					
95	1888 09 301	FL METAL (F) ASS'Y	1		
96	1888 09 302	FL METAL (R) ASS'Y	1		
97	9P04 20 051	C TAPPING SCREW M2x5	4		
98	9W06 50 050	HLW CUT 1.8x4x0.5	1		
99	1888 09 303	FLYWHEEL (F) ASS'Y	1	747 358 0	
100	9W06 50 080	HLW CUT 1.7x3.5x0.5	1		
101	1888 09 304	FLYWHEEL (R) ASS'Y	1	747 359 8	
102					
103					
104					
105	1880 13 01	E STOPPER A (F)	1		
106	1888 13 02	E STOPPER B (F)	1		
107	9C04 20 503	CAMERA S TAPPING SCREW M2x5 GUIDE	1		
108	1880 13 09	E STOPPER SPRING (F)	1		
109	1880 13 05	E STOPPER COLLAR	1		
110					
111					
112					
113					
114	1880 13 03	E KICK LEVER	1		
115	1880 13 12	E KICK LEVER SPRING	1		
116	1880 13 11	E KICK LEVER COLLAR	1		
117	9P04 20 051	C TAPPING SCREW M2x5	1		
118					
119					
120					

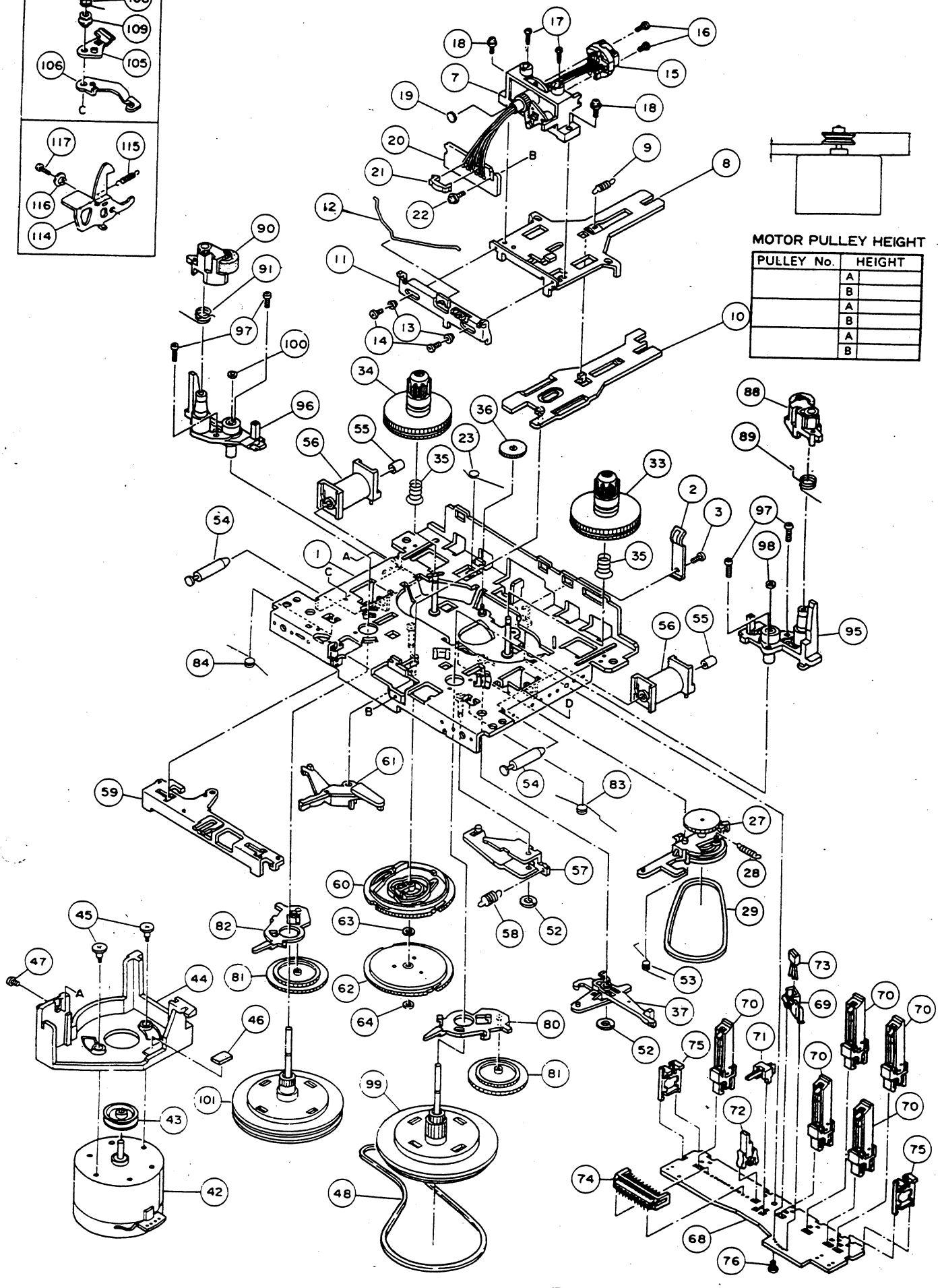
No.	PARTS No.	DESCRIPTION	Q'TY		
1	1888 01 501	CHASSIS ASS'Y	1		
2	1880 01 02	PACK SPRING	1		
3	9P11 20 032	C TAPPING SCREW M2x3 (SPECIAL)	1		
4					
5					
6					
7	1880 02 301	HEAD BASE ASS'Y	1		
8	1888 02 02	HEAD PANEL (A)	1		
9	1880 02 21	RC SPRING (V)	1		
10	1888 02 501	HEAD PANEL (B) ASS'Y	1		
11	1880 02 06	CHP LEVER	1		
12	1880 04 05	PINCH ROLLER SP	1		
13	1865 02 28	CHP LEVER COLLAR	2		
14	9C01 17 301	SCREW (FOR CAMERA) M1.7x3	2		
15	6202 06 04	HEAD YK14R-BA410	1		
16	9F13 16 482	HEAD COLLAR SCREW S	2		
17	9P15 20 063	⊕⊖ SCREW	2		
18	9P02 20 051	TAMS SCREW M2x5	2		
19	1865 09 61	SPACER	1		
20	1865 02 66	RELAY BOARD	1		
21	1865 02 49	WIRE CLAMP	1		
22	9P12 20 051	S TAMS TAPPING SCREW M2x5	1		
23	1888 02 04	HEAD PANEL SPRING	1		
24					
25					
26					
27	1888 07 301	RF CLUTCH ASS'Y	1		
28	1888 07 09	RF PULLEY ARM SPRING	1		
29	1888 07 10	RF BELT	1		
30					
31					
32					
33	1888 05 305	T REEL ASS'Y (F)	1		
34	1888 05 306	T REEL ASS'Y (R)	1		
35	1880 05 22	B.T SPRING (R)	2		
36	1888 05 08	FF GEAR	1		
37	1888 05 09	RF TRIGGER ARM	1		
38			1		
39					
40					
41					
42	6003 03 44	MOTOR SHU-2L00	1		
43	1880 12 08	MOTOR PULLEY	1		
44	1888 12 02	MOTOR BRACKET	1		
45	1921 12 02	MOTOR COLLAR SCREW	2		
46	1820 13 12	MAT	1		
47	9P04 20 051	C TAPPING SCREW M2x5	1		
48	1880 09 10	M BELT	1		
49					
50					
51					
52	9W06 40 040	HLW CUT 2.1x5x0.4	2		
53	1888 21 09	TRIGGER ARM SPRING	1		
54	1880 21 05	PLUNGER	2		
55	1880 21 06	PLUNGER HOLDER	2		
56	1888 21 08	SOLENOID	2		
57	1888 21 04	P KICK LEVER	1		
58	1880 21 11	PK LEVER SPRING	1		
59	1888 21 01	CH SLIDE LEVER	1		
60	1888 21 02	M GEAR	1		

MODEL TN-1800Z-110



MOTOR PULLEY HEIGHT

PULLEY No.	HEIGHT
	A
	B
	A
	B
	A
	B



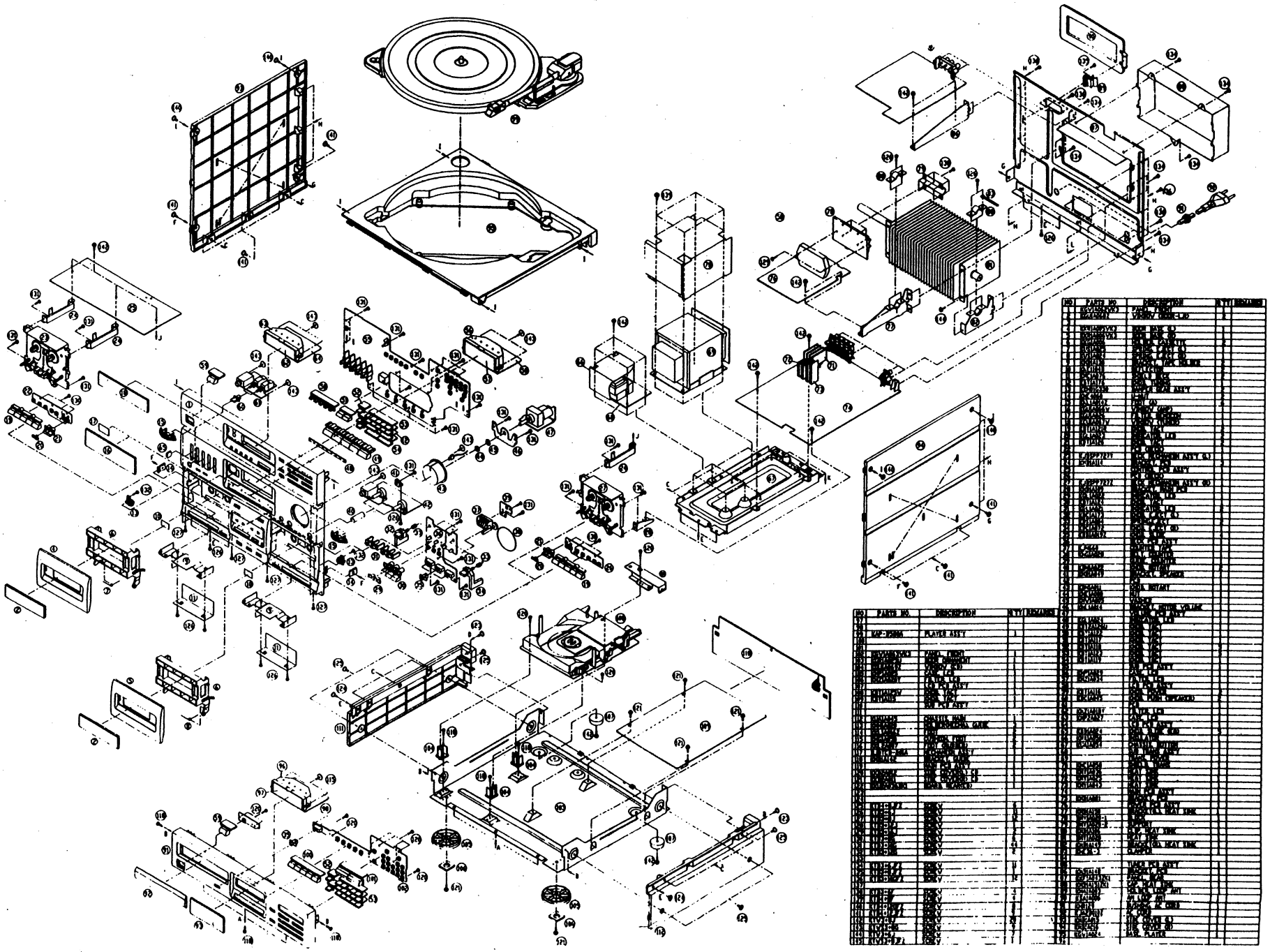
TANASHIN DENKI CO., LTD.

S LIST

TN-1800Z-//0

No.	PARTS No.	DESCRIPTION	Q'TY		
61	1888 21 03	M TRIGGER ARM	1		
62	1888 21 05	RF CAM GEAR	1		
63	9E01 00 202	E RING ϕ2.0	1		
64	9W06 50 040	HLW CUT 1.55x3.5x0.5	1		
65					
66					
67					
68	1888 53 01	P BASE	1		
69	1888 53 03	IC PROTECTOR	1		
70	6401 01 193	MTS-10431MVDO	5		
71	6401 01 194	MSW-18211MVDO	1		
72	6401 01 195	MCV-00511MVDO	1		
73	6804 06 04	HALL IC LB9050TN	1		
74	6815 02 06	CONNECTOR TXL-P12PM1	1		
75	1888 53 04	P BASE STAD	2		
76	9P04 20 041	C TAPPING SCREW M2x4	1		
77					
78					
79					
0	1888 05 501	T GEAR ARM (F) ASS'Y	1		
81	1888 05 07	T GEAR	2		
82	1888 05 502	T GEAR ARM (R) ASS'Y	1		
83	1888 05 13	TG ARM (F) SPRING	1		
84	1888 05 14	TG ARM (R) SPRING	1		
85					
86					
87					
88	1888 04 301	PINCH ROLLER ARM (F) ASS'Y	1		
89	1880 04 03	P ARM (F) SPRING	1		
90	1888 04 302	PINCH ROLLER ARM (R) ASS'Y	1		
91	1880 04 04	P ARM (R) SPRING	1		
92					
93					
94					
95	1888 09 301	FL METAL (F) ASS'Y	1		
96	1888 09 302	FL METAL (R) ASS'Y	1		
97	9P04 20 051	C TAPPING SCREW M2x5	4		
98	9W06 50 050	HLW CUT 1.8x4x0.5	1		
99	1888 09 303	FLYWHEEL (F) ASS'Y	1		
00	9W06 50 080	HLW CUT 1.7x3.5x0.5	1		
101	1888 09 304	FLYWHEEL (R) ASS'Y	1		
102					
103					
104					
105	1888 13 06	E STOPPER A(F)	1		
106	1888 13 03	E STOPPER B(R)	1		
107	9C04 20 503	CAMERA S TAPPING SCREW M2x5 GUIDE	1		
108	1880 13 09	E STOPPER SPRING (F)	1		
109	1880 13 05	E STOPPER COLLAR	1		
110					
111					
112					
113					
114	1880 13 08	E KICK LEVER	1		
115	1880 13 12	E KICK LEVER SPRING	1		
116	1880 13 11	E KICK LEVER COLLAR	1		
117	9999 14 04	S TAPPING TAMS SCREW M2x6	1		
118					
119					
120					

EXPLODED VIEW



■ RESISTORS AND CAPACITORS

Notes: .Part numbers are indicated for most mechanical parts.
Please use this part number for parts order.
.IMPORTANT SAFETY NOTICE.
Components identified by ⚠ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.
.The unit of resistance is OHM(Ω).
K=1000Ω, M=1000kΩ
.The unit of capacitance is MICROFARAD(uF).
P=10⁻⁶uF.

■ Numbering system of Resistor

Example

KRD	25	F	J	101
Type	Wattage	Shape	Tolerance	Value

■ Numbering System of Capacitor

Example

KCBS	1H	102	Z	F
Type	Voltage	Value	Tolerance	Peculiarity

Resistor Type	Wattage	Tolerance
KRD:Carbon KRG:Metal Oxide KRF:Metal Cement	20:1/5W 25:1/4W 50:1/2W 12:1/2W 1:1W 2:2W 3:3W	F:=±1% J:=±5% K:=±10%

Capacitor Type	Voltage		Tolerance
	ECEA Type	Other	
KCB:Ceramic KCC:Ceramic KCK:Ceramic KCFR:Semiconductor KCQI:Polyester KCQP:Polypropylene KCQS:Polystyrol	0J:6.3V 1A:10V 1C:16V 1E:25V 1H:50V 1V:35V 25:25V	1H:50V DC 1:125V DC KC:400V AC D25V DC	C:±0.25pF G:±2% J:±5% K:±10% Z:+80%, -20%

■ ELECTRICAL PARTS LIST

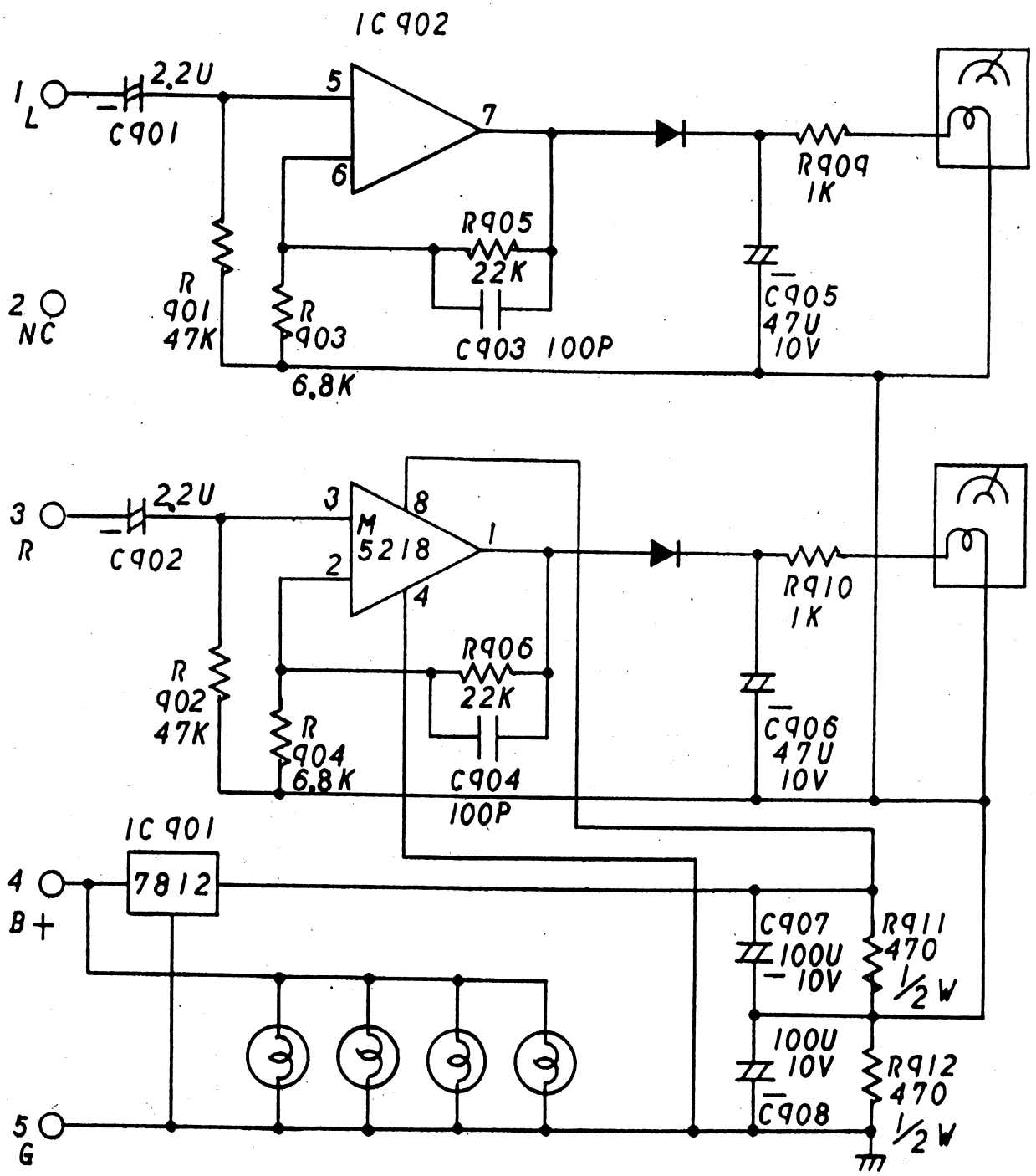
REF NO.	PART NO.	DESCRIPTION
	PRINTED CIRCUIT BOARDS	
PCB1	KUP10413	MAIN PCB
PCB2	KUP10414	EQ PCB
PCB3	KUP10415	SUB PCB
PCB4	KUP10416	TUNER PCB
PCB5	KUP10417	AMP PCB
PCB6	KUP10418	POWER PCB
PCB7	KUP10355	CD SUB PCB
PCB8	KUP10429	CD MAIN PCB
PCB9	KUP10318Y	REMOCON PCB
PCB1	**KUP10413**	**MAIN PCB**
	IMPORTANT PARTS	
L502,503	KLM9C008Z	COIL TRAP
L601,602		
T501	BL08C004-S	COIL BIAS
L501	KLQB101KLZ	COIL INDUCTOR
L603,604	KLQB542KLZ	COIL INDUCTOR
T502,503	BVM9C002-S	COIL MPX
D703	BVDPBPC1003F	DIODE BRIDGE
D704	BVDPBM203	DIODE BRIDGE
D601,602	KVD1N4148MT	DIODE
D706		
D603,604	KVD1N4148T	DIODE
D605,606		
IC51,54,64	KVIMC4558	I.C
IC52	BVITC4052BP	I.C
IC53	BVIMLC4066BH	I.C
IC55	BVILA2000	I.C
IC61	BVIUPC1330HA	I.C
IC62	KVIBA3416BL	I.C
IC63	BVICXA1101P	I.C
IC71	KVIGL7812	I.C
IC72	KVIGL7912	I.C
IC73	KVIGL7805	I.C
C758,759	KCEA1EU222E	CAP, ELECT
C761,762	KCETS63V822U	CAP, ELECT
C763,765,766	KCK2W223ZF	CAP, CERAMIC
C791,792,793	KCKW2H472PE	CAP, CERAMIC
JK51	KJF1096ZB-K	JACK,TERMINAL
JK71	KJJ5Q001Z-C	TERMINAL SPEAKER
SVR1,2	KVNCA104B01G	RES,SEMI FIXED
SVR3,4,5,6	KVNCA223B01G	RES,SEMI FIXED
SVR7,8	KVNCA472B01G	RES,SEMI FIXED
CN1,10,16 CN19,20	KJP03GA09ZG	WAFER
CN2	KJP05GA09ZG	WAFER
CN3,5	KJP02GA09ZG	WAFER
CN4	KJP09GA09ZG	WAFER
CN6,15,21	KJP04GA09ZG	WAFER
R772,773	KRG1ANGJ682H	RES, METAL FIXED
Q501,502,605 Q607,732	KVTKSD1021YT	T.R
Q503	KVTKSR2206T	T.R
Q510,511,512	KVTKSC2316YT	T.R
Q513,611,612 Q613,614,615 Q616,617,618 Q629,630,631 Q632	KVTKSC2785YT	T.R
Q514,603,604 Q610,619,620	KVTKSR1210T	T.R

REF NO.	PART NO.	DESCRIPTION
Q621,622,623		
Q624,625,633		
Q634		
Q515,516	KVTKSR2210T	T.R
Q601,602,608	KVTKSR1204T	T.R
Q627,628,635		
Q606	KVTKSR2204T	T.R
BN8	KWZAMC500CN32	WIRE ASS'Y
BN9	KWZSPP727BN09	WIRE ASS'Y
BN11	KWZSPP727BN11	WIRE ASS'Y
BN12	KWZSPP727BN12	WIRE ASS'Y
BN14	KWZSPP727BN14	WIRE ASS'Y
BN18	KWZSPP727BN18	WIRE ASS'Y
BN22	KWZSPP727BN22	WIRE ASS'Y
BN23	KWZSPP727BN23	WIRE ASS'Y
BN62	KWZSPP727BN62	WIRE ASS'Y
BN64	KWZSPP727BN64	WIRE ASS'Y
BN66	KWZSPP727BN66	WIRE ASS'Y
PCB2	**KUP10414**	**EQ PCB**
	IMPORTANT PARTS	
D202	KVDSLR54VC3	L.E.D
D203,204,205	KVDSLV31VC3	L.E.D
D206,207		
IC21,22	KVIKA2223	I.C
IC23	KVIGD74HC138	I.C
IC24	BRVSBX-1483	I.C HYBRID
IC26,27	KVIGL324	I.C
S201,202,203	KST1A006Z	SW. TACT
S204,205,206		
S207,208,209		
S210,213,214		
S216,217,218		
S219,220,221		
S222,223,224		
S225,226,227		
S228,230,231		
S232,233,234		
VR25,26,27	KVV2L13W503Z	RES.VARIABLE
VR28,29		
BN7	KWZSPP727BN07	RES.VARIABLE
BN16	KXZAMC660BN16	RES.VARIABLE
BN17	KWZSPP727BN17	RES.VARIABLE
BN19	KWZSPP727BN19	RES.VARIABLE
BN24	KWZSPP727BN24	RES.VARIABLE
BN25	KWZSPP727BN25	RES.VARIABLE
BN26	KWZAMC660BN26	RES.VARIABLE
BN27	KWZAMC660BN27	RES.VARIABLE
BN63	KWZSPP727BN63	RES. VARIABLE
JW33	KWD2005240FP	RES.VARIABLE
JW34	KWD2007250FP	RES.VARIABLE
Q211	KVTKSR1210T	T.R
PCB3	**KUP10415**	**SUB PCB**
	IMPORTANT PARTS	
D208,209,218	KVDSLV31DC3	L.E.D
D210,213	KVDSLV31MC3	L.E.D
D211,212	KVDSLV31VC3	L.E.D
D214,215,216	KVDSLH56MC3	L.E.D
D217		
IC25	BVILC7561	I.C
IC28	BVILA3210	I.C
IC29	BVILA6462D	I.C
JK21	KJJ2E003Z-H	JACK. MIC
LCD3	KALLB007AR	L.C.D
PL21,22	KBL001	LAMP, PILOT
S240,241,242	KST1A006Z	SW. TACT

REF NO.	PART NO.	DESCRIPTION
S243,244,245		
S246,247,250		
S251,252,253		
S254		
S248,249,255	KST1A011Z	SW. TACT
S256		
SW24	KSS2B001Z	SW. SLIDE
SW25,26	KSS3B003Z	SW. SLIDE
VR21	BVV9V03B104Y	RES. VARIABLE
VR22	KVV1B03W104Z	VOLUME.ROTARY
VR23	KVV1B04W503Z	VOLUME.ROTARY
CN17,24,30	KJP04GA09ZG	WAFER
CN31,66		
CN23	KJP02GA09ZG	WAFER
CN25	KJP08GA09ZG	WAFER
CN32	KJP02GA10ZM	WAFER
CN61	KJP04GB10ZG	WAFER
BN05	KWZAMC660BN05	WIRE ASS'Y
BN15	KWZSPP727BN15	WIRE ASS'Y
BN20	KWZAMC660BN20	WIRE ASS'Y
BN30	KWZAMC660BN30	WIRE ASS'Y
BN31	KWZAMC660BN31	WIRE ASS'Y
BN35	KWZAMC660BN35	WIRE ASS'Y
BN36	KWZAMC660BN36	WIRE ASS'Y
BN37	KWZAMC660BN37	WIRE ASS'Y
BN38	KWZAMC660BN38	WIRE ASS'Y
JW39	KWD2011260LP	WIRE ASS'Y
JW40	KWD2009260LP	WIRE ASS'Y
JW52	KWZAMC660JW52	WIRE ASS'Y
Q201,202,208	KVTKSD1021YT	T.R
Q209		
Q203	KVTKSR2210T	T.R
Q206	KVTKSC2785YT	T.R
Q210,211	KVTKSB811YT	T.R
Q212	KVTKSC945CYT	T.R
PCB4	**KUP10416**	**TUNER PCB**
	IMPORTANT PARTS	
BPF1	KVFBPMB8	B.P.F
CF1,2	BVFE107MSH-A	FILTER.CERAMIC
CF3	BVFSFZ459HL	FILTER.CERAMIC
CN7,64,67	KJP02GA09ZG	WAFER
CN18,26	KJP06GA09ZG	WAFER
CN27,63	KJP03GA09ZG	WAFER
CN31	KJP04GB10ZG	WAFER
CN33	KJP05GB10ZG	WAFER
CN34	KJP07GB10ZG	WAFER
CN41	KJP08GB10ZG	WAFER
CN65	KJP05GB03ZM	WAFER
CT1,2	KCRA020S12	CAP. VARIABLE
C110	KCQS1H471JZ	CAP. STYROLE
C154	KCQS1H102JZ	CAP. STYROLE
C179	KCEAOJU102E	CAP. ELECT
C180	BCEAC310G473Z	CAP. SUPER
D103	KVDKV1236Z	DIODE
D108	BVDMA27WA	DIODE
FE01	BNVFG3E140A	TUNER, ELECTRONIC
IC11	BVIAN7273A	I.C
IC12	KVIKA2261	I.C
IC13	BVILM7001	I.C
IC14	BVIUPD75P31GF	I.C
IC15	BVIS8053ALB	I.C
JK1	KJJ3S006Z	TERMINAL. ANT
LCD1	KALLB0702AR	L.C.D
L102	KLA2B007-Z	COIL. AM ANT
L103	KLO2B7-G	COIL. AM OSC
L104	KLI2B101-G	J.F.T AM
L105	KLI3B013-G	J.F.T FM

REF NO.	PART NO.	DESCRIPTION
L106	KVI3B014-G	J.F.T FM
L107,108	KLM5B2-T	COIL. MPX
L109	KLQB542KLZ	COIL
L112	KLQA183KW	COIL
PL11,12	KBL001	LAMP. PILOT
PL13	KBL05115013Z	LAMP. PILOT
Q101	KVTKSC2786YT	T.R
Q103,104,112	KVTKSR2210T	T.R
Q105,106,111	KVTKSC2785YT	T.R
Q121,122,140		
Q108	KVTKSR1206T	T.R
Q109,143	KVTKSR1210T	T.R
Q110,113,136	KVTKSR1204T	T.R
Q141		
Q123,124	KVTKSD1021YT	T.R
Q125,142,144	KVTKSR2204T	T.R
Q137	KVTKSC2316YT	T.R
RX11	KRGSN5X104J	T.R
RX12,13	KRGSN4X103J	T.R
SW11	KST1A010Z	SW. TACT
VR11	KVNCA472B01G	RES. SEMI FIXED
VR12	KVNCA102B01G	RES. SEMI FIXED
X101	KOX07200A200C	CRYSTAL
X102	KOX04194A120C	CRYSTAL
BN21	KWZAMC660BN21	WIRE ASS'Y
BN41	KWZAMC660BN41	WIRE ASS'Y
BN67	KWZSPP727BN67	WIRE ASS'Y
PCB5	**KUP10417**	**AMP PCB**
	IMPORTANT PARTS	
CN62	KJP07GA09ZG	WAFER
C811,812	KCEA2AU101E	OAP.ELECT
D803,804,805	KVD1N4003H	DIODE
IC81	BVISTK4231(2)	I.C AMP
IC82	BVITA7317P	I.C PROTECTOR
C801,802	KLR9Y001Z	COIL. SPEAKER
RL81	KSL4B002ZV	RELAY
R815,816	KRD50FJ472P	RES. CARBON
R825,826	KRF5ZXJR47	RES. CEMENT
R829,830,831	KRG1ANJ4R7H	RES. METAL OXIDE
R862,863	KRD50FJ102P	RES. CARBON
Q801,802	KVTKSR1204T	T.R
Q803	KVTKSA733CYT	T.R
Q804	KVTKSC945CYT	T.R
BN13	KWZSPP727BN13	WIRE ASS'Y
BN61	KWZSPP727BN61	WIRE ASS'Y
PCB6	**KUP10418**	**POWER PCB**
	IMPORTANT PARTS	
CN11	KJP06GA09ZG	WAFER
CN12	KJP07GA09ZG	WAFER
CN13	KJP03GA09ZG	WAFER
CN14	KJP04GA09ZG	WAFER
C370,371,372	KCKW2H472PE	CAP. CERAMIC
C901	BCKWKC103PE2	CAP. CERAMIC
D901	KVD1N4003H	DIODE
D902	BVDPBM152	DIODE BRIDGE
JK22	KJJ63B	JACK.HEADPHONE
RL91	BSL1A04AV-0	RELAY
R231,232	KRG2ANJ561H	RES. METAL OXIDE FILM
R904,905	KRD1CJ1RO	RES. FUSE
SW21	KSH2007Z	SW. PUSH(4C2P)
SW22	KSH2B02A-G	SW. PUSH
T902	KLT5J012ZE	TRANS. POWER(SUB)

REF NO.	PART NO.	DESCRIPTION
PCB7/8	**KUP10355/10429**	**CD PCB**
	IMPORTANT PARTS	
IC21	BVILA9200NM	RF AMP
IC21,32	BVILA6510	SERVO. IC
IC33	KVIKIA4558P	OP AMP
IC41	BVILC7860K	D.S.P
IC42	BVI6116	S.RAM
IC51	BVIM5294P	POWER IC (5V)
IC52	KVIKS74HCT14	HEX SCHEMITT TRIGER. INVERT
IC61	BVISM5807DP	DIGITAL FILTER
IC62	KVILC7881	D/A CONVERTOR
IC63,64	KVIKIA4558P	OP AMP
IC71	BVIANAM1015C	u-COM
VD41	BVDSVC211	VARICAP DIODE
D501	BVDPBM152	BRIDGE DIODE
D802	KVDMTZJ3.3BT	ZENER DIODE
Q301,302	KVT2SC536NPFT	T.R
Q303	LVTDTC114UST	T.R
Q304	LVT2SA608NPFT	T.R
Q501	KVTDTA114YST	T.R
Q502	KVTDTC114YST	T.R
Q503	KVTKTD2058Y	T.R
Q505	KVTDTC114YST	T.R
Q602	KVTDTA114YST	T.R
Q603	KVTDTA114YST	T.R
Q604,605	KVT2SC536NPFT	T.R
Q606,607	KVTDTD1302T	T.R
Q608	KVTDTC114TST	T.R
Q609	KVTDTA114YST	T.R
Q701,702	KVTDTC114YST	T.R
Q801	KVT2SA608NPFT	T.R
Q802	KVTDTA114YST	T.R
Q803	KVTDTC114YST	T.R
R705,706	KRD50FJ330	33 ohm(1/2W)
VR11	KVNCA223B01G	22K ohm
VR12	KVNCA104B01G	100K ohm
LCD7	KALSLC80032RSN	L.C.D
LP01,02	KBL168030Z	LAMP
L201	KLM9B005-Z	L.P.F
L401	KLM9B002-Z	O.S.C
XL61	KOX08643A300C	CRYSTAL (8.643MHz)
XL71	BVFCSA400MG	OSC. CERAMIC (4MHz)
PCB9	**KUP10138Y**	**REMOCON PCB**
	IMPORTANT PARTS	
IC81	BVISPD0122G	u-COM
X801	BSB455EB1	OSC. CERAMIC
Q801	KVTKTC2120Y	T.R
D801	KVDEL1L2B	EYE LED
D802	KVDSLC22VR	LED
	OTHERS	
	BJD1G2S04Z	MECHANISM PLAY DECK
	BJD1G2S05Z	MECHANISM R/P DECK
	KLT5T025ZE	TRANS. MAIN
	KJN660	COUNTER TAPE
	BMY1A020	HEAT SINK
	KJA2B010Z	CORD POWER
	KBA2C3150TLE	FUSE
	KMX1A031	INSULATOR
	KSA1A006	LOOP ANT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C901
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R909
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R905
22K
R
901
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6.8K
C903 100P
C905
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